



NORMAN J. COLMAN, EDITOR AND PROPRIETOR.

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## STEAM CULTIVATION.

BY COL. C. W. SALADIE, OF PADUCAH, KY.  
NO III.

ED. VALLEY FARMER: My last article was de-  
voted to a description of the machinery pertain-  
ing to the steam plow; but a detailed description  
of such a contrivance necessarily requiring more  
space than I could reasonably expect you to ap-  
propriate to one article, I concluded to complete  
my description of the machinery in two articles.  
With this understanding, "time expired" while  
I was speaking of the harrow.

I will now proceed to show in what manner  
the turning of the machine is effected by having  
the large revolving drum—before described—  
made in two sections. I have already stated that  
it is the duty of one man to attend to the hand  
wheel, having connected to it the arrangements  
for raising and lowering the plows, while the  
engine is at work. Within reach of this opera-  
tor are two levers designed to throw in or out of  
gear either one of the shifting pinions connected

to both sections of said revolving drum, so that  
in turning the machine, that section of the drum  
on the inside of the circle being described by the  
machine, when in the act of turning, is thrown  
out of gear, leaving the engines to act entirely  
upon the outside one, and thereby facilitating  
the turning of the machine on precisely the same  
principle that the stopping of one wheel and  
going ahead on the other, facilitates the turning  
of a side wheel boat. Throw out of gear both of  
those shifting pinions and the machine will re-  
main at rest, while the engine acts only upon  
the power shaft and belt wheels, for the perfor-  
mance of any other kind of stationary work, as  
will presently appear.

Being unaided in this description by an en-  
graving of the machine, it is proper, before pro-  
ceeding farther, to give the reader an idea of its  
general appearance from a side elevation, that  
he may the more clearly understand what fol-  
lows.

In appearance, from a side elevation, the ma-  
chine is not unlike the general outline of a rail-  
road locomotive. In place of the "cow-catcher,"  
imagine you see the revolving harrow connected,  
and in place of two wheels on each side under  
the front end of the machine, notice but one;  
and in place of the two "drivers" on each side  
of the machine, let the end of the large revolving  
drum represent but one; immediately back of this  
you will observe the rotary plows, which, at a  
distance, would, with their arms and mold-  
boards remind you of the wheel to a small stern  
wheel boat. The boiler is upright and placed in the  
machine immediately in front of the revolving  
drum, and upon which is surmounted a smoke  
stack shaped like that usually seen upon the lo-  
comotive. Immediately over the drum is a plat-

form extending the full width of the machine. This platform extends well back, so that a plumb line suspended from its end would touch the ground about three feet six inches back of the drum. Upon this extreme edge of the platform is secured the hand-wheel and apparatus for raising and lowering the plows, and where you will observe standing operator number one.— Standing on the same platform on the right-hand side of the machine near the boiler, you will observe operator number two, whose duty it is to put on and cut off the steam and pilot the machine. Down lower, and in front of the boiler, you see a boy, number three, whose exalted duty it is to "fire up," and to step to the forward end of the machine to raise or lower the harrow as bid by the pilot. Thus you see, two men and a boy is all the crew we "ship" on this craft.

Now then, patient reader, you understand by this time, certainly, that the harrow is at one end of the machine and the plows at the other; that is to say, the harrow in front and the plows behind. Now you, no doubt, would cling to the old foggy notion of having the plows in front the machine and the harrow behind. However, be that as it may, I promise to convince you that my way is right, before I am done with you.— The truth is, however, if it were not for the two three feet six inch wheels under one end of the machine, and the elevated platform over the large drum at the other end, it would really be hard for you to decide which was front or back; and particularly so, since it travels as readily one way as the other.

Let us now suppose the machine ready to perform plowing only. In that case the harrow is hoisted clear up out of the way, or entirely detached from the machine, and the belts which operate it removed. In this position the plows are really behind, and the machine traveling upon the unplowed ground. But when it is intended to plow, sow, roll and harrow; then, this order of things is reversed. The plow shaft is turned end for end, which will set the point of the plows the other way, apply the harrow and belts, reverse the engine and the plows go before in place of behind, and the machine travels over the plowed ground. Here is where the real object of this large revolving drum is manifested, and shows how it is made to serve three distinctly separate and important purposes: 1. To serve as the "driver" in propelling the machine from place to place; 2d. To prevent the machine from sinking too deeply into the plowed ground, and, 3. To serve as a roller or "clod crusher." The

order in which the four operations before named are performed, is: Plows first; seed distributing arrangement second; the drum roller third, and the harrow fourth and last. The seed, however, may be cast upon the ground on either side of the drum roller, as the case may require. Or, if desired, a regular "wheat drill" may be substituted for the harrow, and which can be raised or lowered by the same apparatus which raises and lowers the harrow.

When used as a stationery engine, for such purposes as before mentioned, the machine is propelled to the place where it is wanted, both of the shifting pinions, connected to the drums, thrown out of gear, and it will remain at rest, while the engines act only upon the belt wheels and the plows, which latter being, in this case suspended clear of the ground, serve as an immense "fly wheel;" but if not wanted for this purpose, the connecting rods are removed from the plow cranks, and the belt wheels alone are acted upon by the engines, and from which arrangement power may be had for all kinds of work to which any portable engine may be applied.

When it is desirous to use the machine for drawing the loaded "truck" or wagon over the prairie or upon level roads, the plows and all their connections are removed, so likewise the harrow and its connections, when we have as complete a model of a locomotive engine for the broad prairie or the common roads as can possibly be conceived of, in proportion to its weight—which, in this condition, would be about six tons. If, however, this proves too light—the engines being sufficiently powerful, and the machine amply strong—weight may be added to the machine until the required degree of traction is obtained. But, in this connection, be pleased to remember what I have already stated in reference to this "traction principle" when applied to a soft and yielding surface. By so doing, you will, of course, understand that I make no pretensions to use any machine as a traction engine on muddy roads or "boggy" prairies, as in that case, every additional pound imposed upon it will but render it proportionably less capable of passing over that character of surface. Therefore when speaking of this, or any other machine, for traction purposes upon the prairie or common road, we expect to have, as nearly as possible, a firm basis to work upon.

In working out the details of my machinery, I never, for a moment, lost sight of the all-important advantage of combining the principle of propelling from either the action of the plows

upon the ground, or the traction of the drums regardless of the plows, so that when not plowing, I still possessed as complete a traction engine as can be devised for the weight of it.

It now only remains for me to describe the operation of mowing and reaping by steam, with the same engine, to complete this part of my subject.

I have before told you that I had a mammoth mowing machine built to be operated by the steam plow engine. This mower is attached to the right hand side of the machine in such manner as to have the cutter bar directly on a line with the bearing of the revolving drum, and the required distance from the ground. The machine takes its forward motion from the traction of the drum, and the cutters derive their motion from a chain belt, by which any degree of rapidity can be imparted to them that may be required. The machine is provided with the necessary means by which to raise or lower the cutter bar of the mower instantly, when passing over the ground.

Wheat and other grain, may likewise be cut with the same machine. But when used for this purpose, there would be great danger attending in consequence of the fire, were it not for the very reliable spark arrester provided for the top of the smoke stack, and the safety apparatus connected to the ash pan and fire box of the boiler, the practicability of which will be made apparent hereafter.

The plans which I have devised, and by which I propose to arrange and manage the farm or plantation upon which the steam plow is to become a "permanent institution," is the next thing in order, to be considered.

*Ashland Farm, Ky.*

#### HOED CROPS AND WEEDS.

For any hoed crops, a clean soil is a greater advantage than most people are aware.

If old strawberry beds run out, do not replant the same ground, but select a spot moderately rich and as free from weeds as possible.

So with all root crops. Manure, which is generally required in hoed crops, makes weeds, as every farmer and gardener must know.

The best soil for roots, strawberries, corn, garden, or the like, is a good natural soil, or ground made rich years before. A rich sod thoroughly cultivated is often just the thing.

Weeds are a pest, as everyone knows. A clean, mellow soil, is a delight to work in, especially if rich and productive.

Every cut of the hoe is so much labor (which is money) expended. Use cheaper means to kill weeds.

#### SWEATING GRAIN.

Much has been heard about sweating grain and hay. The truth is, that all grain (the berry) goes through this operation, whether we will it or not. So with hay and straw. This being demonstrated, an important thing is before the farmer. For this sweating operation, if it takes place in the mow or the granary, will mould your hay or grain. How common it is to have musty hay, or musty grain.

The wise farmer will leave his grain and hay in the field till the sweating operation is over. Then he can keep them in the barn as long as he pleases without injury.

Grain should be cut when in the dough. A few days on the swath, if the weather is warm and dry—longer if otherwise—it should be put up and capped, and remain there a month or more. Then it is fit for the barn or the thresher!

The berry is now thoroughly ripened, the sweating process accomplished; and you have grain that will make better flour than if ripened on the stem uncut. This seems unnatural—is probably so. But what of that. Are not artificial means the great means of improvement?

Where grain is harvested and threshed at once, it is recommended in order to absorb the moisture (sweat) to distribute bricks throughout the bin, say "a good dry brick to every eight bushels." F.G.

#### MULCHING WITH MANURE.

The difficulty with our summers is, that there is too much drouth. A rich, mellow soil is, in part, a preventive of this. A coat of straw, sawdust, tan-bark, or almost any covering, will prevent the sun from striking the soil, and the ground will consequently be kept more moist. But these applications require labor. To remedy this, when manure is applied to enrich your land, let it be done as much as possible as a top-dressing, we mean on grain as well as meadows or pastures. Draw rank manure—any manure—early in the fall upon your meadows or grass lands, spread at once; but on cultivated land, manure can only be applied to the surface after the harrow has left it, and then it should be applied. It may be harrowed in or not. It will not only add fertility to the grain, but at the same time afford a covering against the sun and wind of great importance. This is getting to be understood now. It is the protection from the sun that makes it so advantageous. Raw, or unfermented manure may be used on grain in this way, with perhaps little, though some, injury at first. But not so much as on meadows. Rank manure is bad applied on

meadows in the spring. It is beneficial then only as a mulch. Let farmers try little spots of grain in this way for an experiment, and they will see what a discovery they have made. It will not do to say the soil is rich enough:—the soil is deteriorating; and increased richness adds increased abundance of most products. When the soil is still rich, then is the time to prepare against its exhaustion. When once exhausted it will be too late. We will then have the soil of Italy, Ireland, Egypt and Greece, and all the ancient domain. It is considered an impossibility to reclaim such soils. This should be avoided; the soil kept good—and now is the time to do this. Land mulched with manure has the advantage both of moisture and fertility; two things gained in one. Mulching is assuming an important rank in agriculture. It is the coat that protects. Try a little manure on your grain, harrowed in, or otherwise.

#### Estimating the Capacity of Barns.

Very few farmers are aware of the precise amount of shelter needed for their crops, but lay their plans of outbuildings from vague conjecture or guessing. As a consequence, much of their produce has to be stacked outside, after their buildings have been completed; and if additions are made they must be put up at the expense of convenient arrangement. A brief example will show how the capacity of the barn may be adapted to the size of the farm.

Suppose for example, that the farm contains 100 acres, of which 90 are good arable land, and that one-third each are devoted to meadow, pasture, and grain. Ten acres of the latter may be corn, stored in a separate building. The meadow should afford two tons, per acre, and yield 60 tons; the sown grain, 20 acres, may yield a corresponding bulk of straw, or 40 tons. The barn, should, therefore, besides other matters, have a capacity for 100 tons, or over one ton per acre as an average. Allowing 500 cubic feet for each ton (perhaps 600 would be nearer) it would require a bay or mow 40 feet long and 19 feet wide for a ton and a half to each foot of depth. If 20 feet high it would hold about 30 tons. If the barn were 40 feet wide with 18 feet posts, and 8 feet of basement, about 45 tons could be stowed away in a bay reaching from basement to peak. Two such bays, or equivalent space, would be required for the products of 90 well-cultivated acres. Such a building is much larger than is usually allowed; and yet, without it there must be a large waste, as every farmer is aware who stacks his hay out; or a large expenditure of labor in pitching and re-pitching sheaves of grain in threshing.

In addition to this, as we have already seen, there should be ample room for the shelter of domestic animals. In estimating the space required, including feeding alleys, &c., a horse should have 75 square feet; a cow 45 feet; and sheep about 10 square feet each. The basement of a barn, therefore, 40 by 75 feet in the clear, will stable 30 cattle and 150 sheep, and a row of stalls across one end will afford room for 8 horses. The 30 acres each of pasture and meadow, and the 10 acres of corn fodder already spoken of, with a portion of grain and roots, would probably keep about this number of animals, and consequently a barn with a basement of less size than 40 by 75 feet would be insufficient for the complete accommodation of such a farm in the highest state of cultivation.

—[*Ex.* J. J. THOMAS.

#### A NEW FLAX DRESSING MACHINE.

If there is any man who believes that the days of invention are past, he could have this belief shaken in no better and more effective way than by thoroughly examining the new flax dressing machine which has been patented by Messrs. Mallory & Sanford, and which may be seen at their office, corner of White and Centre streets. This flax breaking and dressing machine is, as an improvement, of inestimable value to flax growing farmers. It consists of two fluted rollers through which the straw passes, being completely broken in its passage, and entirely divested of all refuse. This is done in such a manner that the use of the scratching mill to free the lint of woody particles is rendered almost unnecessary.

This machine, which may be classed among the scientific curiosities of the day, occupies scarcely as much room as the bellows in a blacksmith shop. It is made of four different sizes, the first weighing twenty-five pounds and capable of dressing three hundred pounds of straw in ten hours; the second measures two feet by two feet, capable of dressing six hundred pounds per day; the third is three feet by three feet, and can dress one thousand five hundred pounds per day, requiring less than one horse power; and the fourth is four feet by four feet, which will dress two thousand five hundred pounds per day requiring less than two horse power.

This machine makes one ton of fibre out of every four tons of straw, and so separates and mauls the flax that it is not required to run the straw through the rollers more than once.

Unrotted flax passed through this machine is excellent stock for the manufacture of paper. At Dayton, Ohio, four dressers are at work

making stock for the paper manufacturer, at a mere cost of \$10 per ton of lint.

It is estimated that this machine can prepare the flax for the paper manufacturer at a cost of two and a half cents per pound; a price less than that paid for rags before the rebellion began.

The portability and the great expedition of this new dresser in preparing flax for the manufacturer are entitled to the highest consideration by all who are interested in the cultivation of flax.—[*N. Y. Com. Advertiser.*]

### Treating and Flavoring Tobacco.

A very common opinion prevailed for a long period, that tobacco was a tropical plant and could not be cultivated in latitudes of moderate temperature. It is a fact, however, that it will grow and may be cultivated, not only in all latitudes where corn or maize comes to maturity, but in regions much farther North. Large crops of tobacco are now raised in the valley of the Connecticut, and the leaf of the plant is smooth and held to be well suited for the wrappers of cigars. It is also cultivated in some portions of Albany and Ontario counties in New York, thus proving that the plant may thrive in our most Northern States. And not only may it be cultivated in such latitudes, but it is well known that soon after it was introduced from America into England it was cultivated for a period with success in several sections of that country, and also in Ireland. In 1570 it was grown in Yorkshire to a considerable extent, but its cultivation was prohibited by an act of Government, for the purpose of deriving a large revenue from that which was imported. This occurred during the period of the Commonwealth, in 1652, and since then not a leaf of tobacco, except as a curiosity, has been grown in England.

We have been told by those who are esteemed connoisseurs of tobacco, that although this plant grows luxuriantly, when properly treated, in the States, still it is not equal to the qualities which are cultivated in warmer latitudes.—This is perhaps owing to the mode by which it is treated, after it has matured. In Virginia, the sun-dried tobacco is held to be the best for chewing, but most of it is finally cured by artificial heat. Tobacco in leaf, is very sensitive to moisture in the atmosphere, because it contains so much potash, common salt and lime. An analysis of this plant gave: potash, 8.7 per cent.; soda, 1.2; lime, 32.2; common salt, 3.8; magnesia, 2.8. In Richmond, which has been the headquarters of the tobacco business, there are very extensive manufactories where the leaf is cured, and afterwards made into plugs for chewing. Great care and attention are necessary to the proper curing of it, and if the weather is moist during the operations it is very liable to mildew. In clear, dry weather it is spread on the tops of sheds, and hung in every situation where it can be exposed to the dry air. The sky is watched with anxiety during such exposure, so that it may not receive a drop of rain.

Very frequently it receives its final drying in warm apartments, and in many cases these are heated with open fires, dry corn-cobs being about the best fuel that can be used. Pine and other woods impart their resinous taste to the tobacco; if the smoke is permitted to permeate through the leaves.

After tobacco is perfectly cured, it is prepared for pressing. It is now a common practice to flavor it with some mixture of a sweet and aromatic character. A common preparation is that of the tonqua bean, which has a pleasant odor. Vanilla is also used, and different manufacturers have their special mixtures. The leaves are spread out and slightly sprinkled with the aromatic liquid until a sufficient quantity of the moisture is absorbed to render them pliable. They are then rolled into cylindrical packages, and these are squeezed into flat plugs in powerful presses. A number of such plugs are subsequently placed together and subjected to a second pressing operation, by which the plugs are converted into blocks, and thus fitted for transport and market. It was formerly the custom to place the pressed tobacco in a room called the sweat-house, where it remained for a considerable period exposed to a warm atmosphere. This made the tobacco sweat; globules of juice appeared upon its surface and dropped on the floor, and its taste was much improved thereby.

It is also common with some tobacco manufacturers to sweeten the dark and rank qualities for chewing by dipping the leaves in bunches into sugar sirup, before pressing them. We have only referred to the treatment of chewing tobacco; the superior qualities being used for this purpose. The terms "honey dew," "sweet leaf," &c., applied to different lots of tobacco, are of the "bunkum" order. The best qualities of tobacco are said to be cultivated on new soil, on the southern sides of gently sloping hills.—[*Scientific Am.*]

### ABOUT HAY.

Feeding out some hay which was harvested earliest, and somewhat peculiarly, we are led to these remarks: There is scarcely a farmer that has not some hay that needs cutting earlier than the rest, for instance, swamp grass, the earlier maturing grasses, and grass that lodges early.

Cut such grass—which is generally a small quantity—and into the barn with it at once.—Spread over the rails loosely; it may be spread quite thick if kept loose. Leave open the doors that the heated air outside may have a full chance for circulation.

If the grass is cut with the dew on, it should be exposed to the sun a short time, till nothing but the natural moisture of the hay is left. Your hay will come out as it went in, except that it is dry and thoroughly cured, with not the least must—bright, clean, nutritious. The hay, after it is cured, may be stored away, and other hay served in the same manner.

### KEEPING POULTRY.

ED. VALLEY FARMER: I noticed in your journal that an inquirer wants to know what the remedy is for setting hens. I will inform him what my remedy is. It is to tie them up by one leg for two or three days and nights, and this will almost invariably break them from setting; but the best and only sure remedy is to get the kind of hens that will not want to set until they are from two to three years old. To illustrate the matter I will give a little of my experience in the hen business:

Two years ago, last fall, I procured me eight Spanish hens (the small kind) and a rooster, they commenced laying sometime the forepart of December, and continued to lay until the next September or October. They laid eighty-three dozen of eggs; the eggs were worth from thirteen cents to fifty cents per dozen; not having a very good place to keep them, I only raised sixteen chickens. I ought to have said I kept two common hens for setting.

Eighty-three dozen sold for,	\$14.47
Sixteen chickens (grown),	16.00

\$30.47

Cost of keeping,	18.89
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Balance in favor of eight Spanish hens and two common was,	\$11.58
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Last year I had thirteen Spanish and two roosters, mostly the large white face, and three common ones, they laid

112½ dozen eggs, sold for,	\$25.07
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Raised twenty-six chickens at,	26.00
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\$51.07

Cost of keeping,	23.19
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Balance in favor of the hens,	\$27.88
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I have, or did have on the first of November, eleven Spanish pullets and one rooster (three common hens for setting), they commenced laying the first part of November, and have laid 44 2-12 dozen eggs up to this time.

I have built me a hen house eight feet by twelve, filled in with tan-bark from four to six inches thick, and have it face to the south, and most of the south is glass. It is essential for the health of the hens to have as much light as possible; and not only that, the lights of glass draw the sun and makes it warm for the hens in cold weather, as I do not let my hens out in freezing weather.

I may at some time give more particulars (if it would be of any use to any one) in building a hen-house, and about the proper food, as my experience has taught me, &c., but for fear I have taxed your patience too long now will close.

S. A. SPICER.

Troy, New York.

### How to Raise Irish Potatoes.

ED. VALLEY FARMER: I will now give you my mode of raising Irish potatoes, it will especially suit farmers who have not the time to cultivate on the extravagant and garden mode.

Manure heavily one-half an acre, plow under, check off as you would for corn, hills apart about the same as corn, select the largest potatoes, so cut them as to secure one or two good eyes to each piece, put one piece in a hill, cover with loose earth five inches deep, cultivate both ways with hoe and double shovel cultivator, be certain to keep clean of weeds, lay them by with a small corn plow, giving them a broad bill, go through occasionally and pull out all weeds. Putting one piece to a hill, gives but one vine with branches sufficiently numerous to entirely cover the ground; a huge top elaborates for one basket of roots only, and the sequence is you obtain only large potatoes and no small ones, at least so few you will never gather them. The ground should be well manured every two years; you can obtain about one hundred and fifty bushels from your half acre.

A. E. CARSON.

Livingston, Iowa.

### CURING HAY.

Will people ever learn to cure their hay instead of drying it? It is doubtful whether they ever will—at least all of them. The whole science of hay-making consists in three things: First, cut your grass when in blossom; second, dry it not too much; third, let it go through the sweating process before it goes into the barn. On these three things depend your quality of hay. Hay should be grass preserved. The nearer to the fresh, tender, succulent grass you get it, the better. Could we have grass growing in winter, how much better than hay. Well, hay is an attempt to do this as near as you can. We dry apples and berries so that we may have them in the winter. We put fruit in bottles and exclude the air so as to have it as near the fresh fruit of summer as may be. But we can't have it absolutely fresh. So we do the best thing we can—"preserve" it. So with grass—we preserve it, and hay is the result. Could we cut our pastures when the grass is tender and young, and save it in that state, what an invention that would be. Perhaps it will yet be done. What feed such grass makes (when cured well) for milch cows and young stock. Horses will eat more matured grass with nearly equal relish. For horses then, grass, when fully grown, will do. To turn a dairy into a meadow when the grass is fit for the scythe, would not be so well as to

turn it in a fresh pasture in June. But we can not cut our pastures. There would be too much labor to harvest your grass three or four times in a season; so economy has something to do in hay-making. Grass, when in blossom, has its full growth, excepting the seed. It is yet tender in a measure, and it has one advantage which no other stage of the grass possesses; it develops its sugar then. Especially is this the case with clover, whose head, when in blossom, is a globe of sweetness. Its large honey cells are evident enough. This comes with the period of blossoming, and with it passes away. Clover then should be cut when in blossom to secure the sugar, as well as other properties equally nutritious, which, if the grass is kept standing longer, vanishes. The best farmers have, therefore, decided that the blossoming time is the best time to cut the grasses, especially clover. When grass is ripe what is it good for? Certainly not for pasture; and will it be better when it is still farther dried and made hard? The blossom finds it still tender, with additional juices of value, which, before and after, it does not possess. Hence, I repeat, the blossoming time is the time for cutting grass.

The next thing is, to save it as near in this state as can be. To dry it thoroughly, so that the tenderest part becomes brittle and falls off in the handling, will not do. The stalk also will become harsh and of a woody nature.—There is a world of such—we will not call it hay. What then must be done? Expose your hay to the sun and dry air—better dry air alone—till it is thoroughly wilted. Then the moisture—mere water—has pretty well escaped, and the juices holding in solution the valuable qualities, are present, and in themselves not spoiling, but keeping the hay soft and pliant. Heat, continued, will evaporate these, and a rain or two, with additional heat to dry, will thoroughly remove all the remains of the juices, or their properties, for they are very delicate and evanescent, held lightly. The sun is injurious. It bleaches and evaporates too strongly. The best way is to cure grass in the shade. Hence the excellence of hay when cured in the barn, scattered over the rails, as is often done when a little grass is cut before harvest has set in, and spread out to dry in this way. It is the greenest of greens. This is probably the best mode of curing hay; but as it is not practicable only to a small extent, so we must resort to other means.

When well wilted, which will take from several hours to half a day, rake your hay into

winrows. Leave there, or make into cocks; for clover, small cocks; Timothy, larger. Here let it remain for about two days, or two days and a half. Then stir or spread apart a little; leave for a few hours, and then into the mow with it. As it then goes in, so it will come out—as green almost as the grass itself, with a slight yellow tinge which the sweating operation imparted, but did not injure. The hay will feel heavy; and it is heavier than when dried to death; but it will not spoil, depend upon it, it is cured. You have the same grass here which so recently was in full blossom and so tender with juices. It is still in blossom and tender with juices. And when you come to feed it out in the winter, it is then that you will see the benefit of curing grass instead of bleaching it, and drying it into straw. In market its superior weight is an advantage—its color also, and its fragrance, for the fragrance of the early harvest field is still there.

Such hay is worth making, and is there no excuse for not making it. We have the machinery to cure it. If rain interferes, salt will still save your hay. When there is the appearance of rain, haul in your hay, even if in the midst of the sweating operation, or even sooner. Avoid rain by all means. Salt will save hay when cut the day it is put into the barn. Sometimes long rains will seriously interfere with hay-making, but generally not. And much, very much, is depending upon the advantages of which we may avail ourselves. It is seldom that (with the aid of a barometer) one misses his guess at the weather. Every hay-maker should have a barometer; this will tell the coming of wet weather beforehand, in time enough to secure a good cutting of grass. Many farmers have this instrument so important to the farmer: they would as soon think of doing without it as a dairyman would without a thermometer.

F.G.

THE SKUNK.—The skunk will now and then eat a chicken—but very rarely. What does it live on then? Beetles, crickets, grasshoppers, mice, &c. Recently much has been said about this animal; and, we are glad to see, mostly in its favor. The skunk is a benefit to the farmer; and not a single one should be killed, unless it gets to chicken thieving, which, of course, is not very pleasant. And then the chickens should be taken care of rather than the skunk. If you do not hurt it, it will not hurt you; and it will weed your ground of insects, and charge you nothing for it. One of our exchanges calls it "the farmers' friend."

From the Iowa Homestead.  
**ON GROWING AND CURING  
 TOBACCO.**

[Concluded from May No.]

As the illustration of the tobacco house embraced in this article gives the plan of curing the tobacco leaves without the stalks attached, it may be well to give the process recommended with that plan, as follows:

After wilting, draw to the house, which should be twenty-four feet wide, fifteen feet high, so as to have three tiers, one above the other. A building of this width and height, thirty-five feet long, will store an acre, or one ton of tobacco. The girts on the side of the building should be five feet apart; a row of posts through the middle is necessary to put girts in, to hold the poles that the plants are tied to. The best poles are made of bass-wood sawed one and a half by four inches, and twelve feet long.

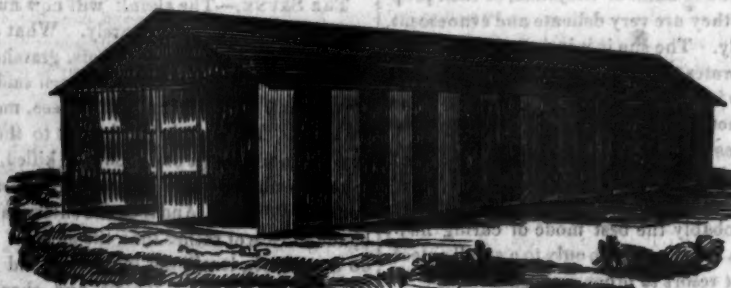
The plants are handed to a man who standing on a movable platform made by a light plank, receives them, and beginning at the upper tier



Tobacco Stacked from the unbroken ones. They are then made into parcels of sixteen or eighteen, called "hands," and are fastened by winding a leaf around them. Place these hands tips on tips, the square ends out. This preserves the moisture. The pile should be kept covered with boards, and the sides also covered, leaving the wound ends exposed to the air. If everything up to this point has been skillfully done, in four or five days the tobacco

he winds a piece of prepared twine around a stalk, fastening the first plant to the pole; the second plant is placed on the other side of the pole, and a single turn is made around the stalk; then again the third stalk is put upon the same side of the first, the twine passed around, and the next on the other side, and so on to the end of the pole, where the twine is made fast. About thirty or thirty-six is hung on a pole, one-half on each side. If this twine gives way it is manifest that they will be let loose. The poles are put on the girts about fourteen inches apart. In this way the whole building is filled. Skill is now demanded to regulate the ventilation until the crop is cured, which is determined by examining the stem in the leaf, which should be hard up to the main stalk. Then in damp weather the tobacco can be taken down and laid in piles, with the tips together to keep it from drying, and to secure this cover over with boards. The next thing is the removal of the leaves from the stalks, taking this time to separate the broken leaves

After Stripping. will be fit to pack in cases, and take to market. The cases should be of pine, two feet six inches square; by three feet eight inches, and of inch lumber. Place the hands tips on tips, and the wound ends against the ends of the box, press with a lever or screw, until 400 pounds are in, then fasten on the top. The tobacco now goes through the sweating process, and will lose about ten per cent, in weight before fit for use.



Tobacco House without side doors, end boarding, and end doors, to show the manner of hanging the tobacco

If tobacco is raised on poor land it will mould in place of sweating, if it is damp enough. The fermentation of the juice in the leaf changes its color to yellow. This fermentation occurs very soon after hanging; if tobacco hangs on the poles so close after yellowing that it will not dry, it will rot, becomes dark brown, is brittle after drying and is comparatively worthless. Sweating will not alter it. This is called "pole sweat" in Connecticut, and "house firing" in Virginia.

#### THE YIELD AND COST.

The average yield is from 1,200 to 1,500 pounds per acre. Growers in Stephenson county, Illinois, state the average yield to be 1,600 pounds per acre, and the crop is stated by purchasers to be as good in quality as is to be found in the market. The price obtained averaged 12½ cents per pound, or about \$200 per acre. Another party in Stephenson county says, it can be raised there for from six to eight cents per pound, and make a good profit to the producer.

Mr. M. Soverhill, of Wisconsin, who has ten acres in this year, (1862) gives the following items as the past and prospective cost of his crop:

#### TOBACCO CROP.

DR.	
Rent of ten acres of land at \$10 per acre,	\$100.00
Plowing and fitting the same,	28.50
Making and sowing plant beds,	3.55
Fencing beds,	1.50
Weeding beds,	12.00
Watering beds,	5.00
Setting beds,	27.50
Cultivating and hoeing first time,	14.00
Cultivating and hoeing second time,	17.25
Three days' worming,	3.75
Seven days' topping,	8.75
Thirty days' suckering,	37.50
Seventy-two days' harvesting,	90.00
Team work, harvesting, estimated,	10.00
Stripping and casing, estimated,	75.00
Interest on cost of shed and fixtures,	35.00

Cost of crop, \$469.25

#### CR.

Plants sold,	\$26.00
Seeds sold and for sale,	25.00
8½ tons tobacco, ten cents per pound,	1,500.00

Worth of crop, \$1,651.00

Cost of crop, 469.25

Balance in favor of crop, \$1,181.75

#### FROM TOBACCO GROWERS IN IOWA.

Several persons who have raised tobacco in this State were requested to give their mode and experience. The following only has been received:

Statement of Joseph Stovers, of Warren county, in regard to his manner of raising tobacco:

"I received yours of 6th December, and have to state, that I have grown tobacco on my farm in Warren county, for the last two years, for the purpose of ascertaining how it would grow in this State. I find that we can grow tobacco of as good quality as in any other part of the United States, excepting only the James river section in Virginia. I was born and raised in Botetourt county, Virginia, near James river, and lived there until I was twenty-one years old, during the whole of which time that I was able to work, I assisted in growing tobacco. After that time I removed to Indiana, where I grew tobacco on a limited scale, every year, for twenty-six years, and until I removed to this State, three years since, when I came to the farm on which I now live. My mode of growing tobacco is as follows:

First, have good seed; the kind I prefer is the Covington, Aranocock, and Little Frederick. The Covington is the kind I grow at present. I burn brush or wood on a piece of ground till the soil turns red on top. When the ground is cold enough I chop it up one or two inches deep, then rake it until it is smooth and fine. I sow a smoke pipe full on a piece one yard wide by eight yards long. I then tramp it till it is level and hard. This should be done in February or March, when the ground is thawed and in good working order.

The best kind of ground to grow tobacco is ridge land, or what is termed mulatto land. All land, except new land, should have ten or fifteen loads of good stable manure to the acre; this is done in the spring before plowing. I break as for corn, and as early in June as possible I re-plow, harrow, and lay off both ways three and a half feet. With a hoe make a small hill in the cross, ready for planting whenever it rains. If there is no rain when the plants should be in, I plant every evening, giving every plant half a pint of soft water. I plant from the first to the last of June. I cultivate as I do corn, two to three plowings, hoeing every time; the last plowing, hill the plants. This is all done before I commence to top. Top as soon as the plant is large enough to pull off the bottom leaves up five or six inches from the ground—then count off ten leaves, and pinch off the balance with your thumb nail. I repeat this every four or five days for eight or ten days; then count off nine leaves and pinch off the remainder—then eight, and seven, and six, and five; by so doing it will bring it all in good time to ripen well, which is known by its spotted and brittle appearance. Pull off all suckers or shod worms every four or five days. My manner of cutting is, as soon as part of

the crop is fully ripe, to split the stalk nearly to the lower leaf, then cut it off and turn the under side up to the sun till it is wilted enough to put in piles four or five inches deep in a place, with the butts of the stalks to the sun, that the stems may also wilt sufficiently to be placed without breaking, on sticks made for the purpose four and a half feet long, which are hung on a scaffold along a fence in the sun; each stick to have ten or twelve plants, and the sticks crowded on the scaffold as close as possible so as to not bruise the leaves. I let the leaves hang in this way till the leaf turns yellow, like a hickory leaf in the fall. Be careful to let no rain on the leaves. It generally requires from six to ten days to become yellow enough. I then hang the poles in a house or pen that is tight and close. Have this house fixed with tier poles, on which I put the sticks six or eight inches apart, and so that the tobacco will hang four or five feet from the ground. A succession of such poles may be placed one above another as high as the house will permit.

After it is all thus placed in the house, I kindle a small fire on the morning of the first day, also next day with a small fire, increasing until noon, being very careful not to scorch or scald the tobacco. The work is then done as far as curing is concerned. By the next day it will come in order, when I remove it to the barn or any other good dry place, where I hang it up and let it remain until winter. I then return it to the curing house, where the firing process is repeated until the whole crop is safe. My curing house is large enough to hold all the tobacco I cut at one time.

I have here given you my mode of growing and curing tobacco practiced for the last forty years. If any one doubts or wants to learn more, call at my residence near Indianola, and I will satisfy him, and exhibit samples of tobacco to the amount of four hundred pounds which I raised.

JOSEPH STOVER.

**THE YIELD OF GRAIN IN ENGLAND.**—The London *Mark Lane Express* gives a table comprising the average yield per acre, of wheat, barley, oats, beans, and peas, for thirty-eight counties in England, prepared from returns received from correspondents of that paper. The average for the cereal grains mentioned is as follows: Wheat, 29 bushels; barley, 37½ bushels; oats, 46½ bushels. The lowest average of wheat in any county returned is 22½ bushels per acre, in Devonshire, and the highest 34½ bushels, in Lancashire. The lowest average of barley is 29 bushels per acre, in Shropshire, and the highest 44 bushels, in Northampton. The lowest average of oats is 34½ bushels, in Westmoreland, and the highest 59½, in Cambridgeshire. The beans mentioned are a kind not much cultivated in this country; the average yield is 32½ bushels per acre; the average yield of peas is 30 bushels per acre.

[Written for the Valley Farmer.]

### Farming in Colorado—Irrigating.

I will now endeavor to explain the mode of irrigating as it is now practiced by our farmers on a miniature scale to what it will be in a few short years. I trust some of your readers may be led to ask, Is it necessary to irrigate? I answer—It is just as necessary and essential to the farmer of Colorado, as it is to those of Utah and portions of New Mexico. They must irrigate to give them a pretty certain thing of having a tolerable fair crop; and why the absence of seasonable rains makes it doubly important some springs, there is a moderate supply of rain until the last of May or the first of June and scarcely any after that for two months, except an occasional shower. In the next place, almost all the good tillable land lies adjoining the various streams that wind their course from the dividing range that divides the waters of the Pacific from those of the Atlantic.

Now for the process: First, a ditch has to be dug so that you can turn water over any and all parts of your tillable land. The size of the ditch will depend on the quantity of water you wish to run through it. Early in the spring the ditch must be well cleaned out and all obstructions removed that might hinder or retard the progress of the water. After the Wheat, Oats, Barley, Rye and Buckwheat are sown and harrowed, we take a small plow and commence at the ditch and run furrows across our field so that the water will go the full breadth of the patch. The distance apart varies from five to twelve feet.—When the ground begins to show the want of rain, turn a small head of water through each furrow, and let it run for a couple of hours, then shut it off. It is best to turn on the water about noon, as the water will be quite warm and it also gives the water a chance to all drain off before night comes, if necessary. This mode is practiced every day or through all summer, and the farmer is amply repaid by the yield and certainty of a crop. Potatoes, turnips, and all vegetables, are treated after the same mode. The highland is not good for tilling, but furnishes abundant feed for cattle, horses and sheep, and they fatten very fast. When turned out to recruit, the best and most nutritious grass is called buffalo or bunch grass; it dries up in the fall, and many claim that it is superior to the hay cut from the lowland for stock.

April 24th, 1863.

O. S. TEMPLER.

Farming is a speculation in the earth's fertility. He that changes most of this fertility into grain and pork, is the most successful. It will be seen at once, to do this, requires mind; and mind is acquired. Agricultural papers fast bestow this.

### HAY MAKING.

There is something beautiful in the operation of making hay when the weather suits. This is so with Timothy, with all kinds of grass, but especially with clover. Cut it when in blossom, when stem and head are tender, and juicy and fragrant. The scythe—if you are so unmannerly as to cling to the old poetic usage—will “walk” through with the greatest ease, showing what a tender thing you have. It is precious, and requires careful handling. Let the sun wilt it; though it would be better if the sun did not see it at all. His rays are too fierce, and will scorch it and hurt it. Better if in the old fashioned winrow, than spread with the machine. If mowed with the machine, and there is time, put it in winrows, broad and somewhat thin, so that the air can get in. This will measurably relieve it from the sun. Then, if there is warm, dry air stirring, a few hours will sufficiently wilt the grass to fit it for the cock. It should always be cut when the dew is off. Then throw it in small cocks, say of half a hundred weight to the cock. Consult your barometer, and if you are sure of your weather, leave your cocks untouched for about three days, or nearly that. If rain threatens, clap on your hay-caps, or, you are safe in doing it in the start if you like. They will interfere little with the curing process, and will shed rain. Then, if your weather is warm, with a little air in motion, let a hand precede the wagon, and turn over the cocks, loosening up the hay a little. This, with the stir the hay will get in loading and unloading, will be sufficient. And now you have hay that is hay—green, with a slight touch of amber. You have every head entire, not falling into chaff. Every leaflet is there, tenacious of its stalk; the entire stem as the scythe left it, is there—pliable, not brittle and dried to a crisp, with the heads and leaves missing, or lodged on the barn floor, in the mow-seat, in your neck and bosom, and scattered on the field. But here you have heads with the hue of the blossom still there—a flower “pressed”—that is making hay. In this—“pressing your flower”—is the whole secret. Wilt and cure, but dry not. Cure is the only word. The wet weather in many parts of the country during the hay harvest has brought into requisition hay-caps. We are glad to see it. On the whole, they are a benefit. If the weather should continue wet beyond the time allotted for its cure, in with it the first moment it is dried off on the outside. Your hay is cured; but there is still some moisture left; and

you have no means to give this to the air, so sprinkle a little salt on each load, amount according to moisture. Your hay, when fed, comes out about the same; is as readily taken by the stock. Even should it change a little in the mow, how much better so than a bulk of brittle sticks, with all the sugar and the starch out, and all substance. Such “hay” will starve cattle, and is a pity to look at. There is no poetry in such “hay,” neither in the making of it, nor the feeding. There is less labor in making it in the right way; and the wettest season will not spoil it, as in the other case. Such hay—or grass cured—will fatten your stock. It will have the summer effect upon your cattle, upon the bowels. They will eat it with avidity, and brighten up over it. Roots may be dispensed with in the presence of such hay. ’Tis thus one may have summer with his cattle. Such a man is a benevolent, as well as an economical and wise man. The sight of such hay shows the prosperity of a man. There is but little in the country as yet, but it is fast increasing. It will soon be the only hay; and then a better era has dawned for the cattle, horses included—and man also.

### HARVESTING BUCKWHEAT.

A field of buckwheat is a beautiful sight, in all its advances, from the time its twin leaves first break the soil, to the “heaping up of the buckwheat cake.”

The pink stems, clean and reedlike, standing on the clean, naked soil; its multitudinous ramifications, so beautifully intricate, subduing the light; the snowy blooms, as if the whitest cloud had settled down; the fragrance on September afternoons; the music of the bees, dark and brown, and cleanly all; with pumpkin vines of broadest, dappled leaves, and spheres of gold, nestling among its snow, or floating on its wave, like waterlilies on the stream, these are things to indulge in, and make man—the stranger as well as the owner—happy in the possession.—This is the poetical aspect. The practical is to secure the poetical as well as the substantial, by thoroughly mellowing the soil, and manuring (top-dressing) if not rich enough; and then—the most critical of all—the successful harvesting.

It is a simple grain, yet rich in its appearance; by itself, as if it did not belong to the grains of the farm. Buck-wheat—the wheat of the deer, a wild grain, more like an Indian, than a civilized white grain—a dusky berry, copper-colored stalk, a true Indian, classed with the hemlock, the pigeon, and the partridge, blooming most beautifully on our American soil, amid the blackened stumps of the clearings, food “for man, and

beast, and bird," especially the delight of wild flocks and roaming quadrupeds, the joy of hunters to start their covies.

If the reader has followed us thus far, we presume he has forgiven us, and even indulged in the same strain himself; if not, we pity him—we pity his hard labor (presuming him to be a farmer) without the genial influences of nature, of the blossoming field, to cheer him. This, our friend, is needed to sweeten thy toil, this is the flavor of life. But, to harvest the buckwheat.

It is a delicate thing to handle when ripe.—The difficulty is, it ripens uneven. Hence, some of the grain is likely to fall off, while the rest is ripening. To save both is the nice thing—a thing that is not usually done.

Cut your buckwheat when most of the berry can be saved, that is, when the majority of the kernels are either ripe, or sufficiently advanced to ripen in the stock when cut.

It will be seen, by taking this view, that the grain must be cut rather green, earlier than is commonly practiced, and that much milk and many white kernels must be cut down. Your grain will cut all the easier; your straw be the better, and the frost be more aptly robbed of his prize.

Cut early then, and put up at once, when the grain is moist, either with rain or dew. You may avoid the wet. Put up in good sized stacks. The air will readily circulate through. And thus there will be no shelling; you will save all the grain.

To fully preserve the berry from the rain, we advise hay caps, for the heavy, long rains, drown the berry, and the flour loses that vivacity and whiteness which are native with the grain, but which are so rarely seen.

It is in this way alone that buckwheat can be properly secured—that the whole can be secured, and in the best condition. In such a case buckwheat flour becomes one of our best brands of flour if carefully ground. It should not be dried to a crisp before grinding, as is often done. When well secured, as it should be, it will do to take to the grist mill from the fanning mill.—Avoid grinding close, for remember the bran makes up what the flour loses and affords one of the best feeds.

**TO ERADICATE SORREL.**—If you have a field of sorrel that annoys you, plow it in the fall, spread lime over it if you can, and harrow in the lime. Leave till spring unless you wish to sow to winter wheat. In the spring sow early, and seed down with clover, from 6 to 8 quarts to the acre. The lime will stunt—and if you put enough on—destroy, your sorrel. The clover will take its place, and that will be the last of your sorrel.

### OUR DEPENDENCE.

It is a curious fact, and one not generally realized, that the world's population is dependent for its existence upon the preceding year's produce. Did the earth refuse to yield her fruit but for one season, it would depopulate it. How much then are we dependent upon a single year's growth. It must be confessed the earth has been faithful. We need but plant, to reap. It is gratifying to see man trust to nature—rather to the Parent of both man and nature. How accurately is carried out the promise that seed time and harvest shall never fail—else man, for whom all this is made, would perish. Does not this seem like an overruling providence?

**HENS TOO FAT TO LAY.**—A correspondent in the *Country Gentleman* says he had a fine lot of Dorkings, which he took the greatest pains with to have them lay, but all to no purpose. One day he concluded to kill them. He commenced with the poorest, which proved the fattest hen he ever saw, from which he inferred that his hens were too fat to lay. He reduced them in flesh by less feed, and they commenced laying, and have since done well.

**WHEN TO CUT WHEAT.**—Here is something worth the consideration of all wheat raisers! A club of ten farmers in Pennsylvania (Chester County) made experiments in cutting wheat.—Their conclusion was that the best time to cut wheat was "when the grain can be pressed between the thumb and finger, and leave nothing but the husk and a thick pulp, without any fluid around its edges." If cut earlier, there will be loss; if later, there is less weight to the bushel. A few days before or after makes little or no difference.

**GLUE CEMENT.**—A correspondent sends the following described mode of making a cement of glue and shellac. Dissolve half a pound of good common glue in water, in the usual way and saturate clean white paper in it until the glue solution is absorbed. The saturated paper is then dried and cut into strips, and these are put into a clean glue-pot containing about half a pound of alcohol, then boiled gently over a fire for about an hour. A light cover is kept upon the glue-pot during ebullition. The paper is now removed from the glue-pot, and is found freed from the glue, which has been taken up by the alcohol. The object of thus soaking the paper in glue is simply to obtain an extensive surface for the alcohol to act upon the glue. At this stage of the operation half a pound of pulverized gum shellac is gradually added, and the boiling of the alcohol continued with occasional stirring until the gum is dissolved. This forms a very adhesive cement for leather belts and several other purposes.



### Will the Profits of Wool Raising Diminish?

On this the *N. H. Journal of Agriculture* remarks: "According to the last census, the total amount of wool raised in the country was 60,511,343 pounds, while the amount used in manufactories was over 80,000,000 pounds; thus leaving a deficiency of full one-third of the whole amount raised to be supplied by foreign importation. And this deficiency, great as it must appear, it should be remembered, existed at a time when the country was at peace, and when the immense cotton factories of the North were in full operation.

The census report states that the aggregate value to the annual product of these manufacturing establishments amounted to over \$100,000,000. Yet notwithstanding this vast amount of cotton goods forced upon the market every year, at prices so exceedingly low, as to operate to largely diminish the consumption of wool by the substitution of cotton, the business of wool growing and sheep husbandry was generally deemed, we believe, one of the most profitable in which a farmer could engage.

It needs no argument to show that what it has been, in this respect, it must continue to be in a much greater degree—as must be obvious to every one who will give to the subject his careful consideration. It also should be remarked, that wool is not now, and for some time cannot be, subjected to its former competition with cotton, and consequently must command the entire home market.

With these facts before us, it is evident that the demand for wool, for years to come—or until we shall be able to obtain cotton—will be larger than the supply—and that wool growing will continue to be one of the most profitable pursuits to which our farmers can give their attention. So large is the regularly increasing demand, that within a twelvemonth we shall expect to see a further advance in price. At any rate we can see no cause that will operate in the other direction for twice that length of time. Farmer Careful, to be sure, who bases

all his operations on the supposition that one extreme must follow another, has sold his sheep. He says one extreme has been reached and the other is near at hand—that wool and mutton are going to be cheap—and congratulates himself on having sold his sheep while they commanded a high price. We don't believe in his logic, and shall do what we can to prevent others from doing so."—[*Ex.*]

### WOOL GROWERS' CONVENTION.

A convention of wool growers was held at Cleveland, Ohio, the other day, and was very largely attended. The principal topic discussed was whether shearing should be done before or after washing. After a careful consideration of the question, it was resolved that the practice of washing sheep be abolished, because:

1st. It permits of early shearing, which secures a greater quantity of wool, a longer staple, and a better condition of sheep and ewes, through the year.

2d. Of the exposure to contagious diseases, such as scab, foot-root, &c., in places frequented by different flocks to be washed.

3d. It is an expensive, unpleasant job, and unhealthy both for man and sheep.

4th. That the manufacturer must cleanse the wool at all events, and he can do it cheaper than the grower.

5th. That it is to the interest of wool growers to put their unwashed wool in as good condition as possible, by keeping their yards well littered, and by throwing away all filth that can be separated from the wool.

6th. Some lots of wool are more gross and gummy than others, therefore no rate of deduction could be agreed upon suitable to all grades and classes, but that each lot should be bought upon its own merits for quality and condition.

7th. As generally practiced, washing is little or no improvement to the fleece.—[*Ex.*]

The following from the *American Veterinary Journal* contains ideas which are worthy of notice:

Victor Gilbert never allowed ewes to have lambs until they passed their third year; and the bucks were not used until they had arrived at full maturity. During the period of growth and development up to maturity, the reproductive organs are dormant, while at the same time the nutritive function is wholly engaged in elaborating chyle and blood for the development of bone, muscle, and nerve; and thus calling into requisition the reproductive or generative organs before the animal has attained full growth, must necessarily divert the elements intended for nutrition from their legitimate channel, and direct them to the reproductive organs. A too early use of the purely animal function induces weakness and stunted growth.

### Right Feed for Working Teams.

When horses are turned out to grass in the spring of the year, the succulent nature of the food causes them to purge, often to a great extent; this is considered by many persons a most desirable event—a great misconception. The herbage is overcharged with sap and moisture, of a crude, acrimonious nature, to such an extent that all cannot be taken up by the organs destined for the secretion of urine, or by the absorbent vessels of the body; the superfluous fluid therefore passes off through the intestines with the indigestible particles of food, and thus the watery feces are thrown off. Flatulent colic or gripes is a frequent attendant. The system is deranged; but the mischief does not terminate here. If the purging continues, a constitutional relaxation of the bowels is established, very debilitating to the animal, and often difficult to control. I am so decidedly opposed to an unrestricted allowance of luxuriant grass to horses at any age, that nothing could induce me to give it to them. I may not be able to enlist all my readers as converts to the practice; I trust I may a great many of them.

After the second year, hay should form a considerable portion of the daily food, in summer, to every animal intended for hunting or riding. If a horse is supported entirely upon the grass which he collects in a rich pasture field, or upon that which may be cut and carried to him in his paddock, he must consume a much greater bulk than of hay in an equivalent time, to afford nourishment to the system. Grass being very full of sap and moisture, it is very rapidly digested, consequently the horse must be continually eating it. This distends the stomach and the bowels, and the faculty of digestion is impaired; for the digestive powers require rest as well as other organs of the body, if they are to be preserved in perfect condition.

By the custom of grazing, the muscular system is enfeebled, and fat is substituted. This may escape the notice of superficial observers, who do not mark the distinction between the appearance of a fat and muscular animal; who conceive, so that bones are covered, and the points are rounded, all that is requisite has been attained. But that is a very fallacious impression. Let any person who is skeptical on this point ride a horse in the summer which has just been taken out of a grass field, along with another kept on hay and corn, at the moderate rate of seven or eight miles in the hour; the grass-fed horse will sweat profusely, while the other will be perfectly cool and dry. This proves that the system of the one eating grass over-abounds with fat, and those portions of the blood which are destined to form that deposit. Those who advocate grazing, will no doubt exclaim: "Oh, this is a test of condition which is not required in young and growing animals." I beg to state that it is highly important, if the acme of condition is to be attained by animals of mature age, that the growth and gradual development of their frames should be composed of those healthy and vigorous elements upon which the structure of future condition can be raised.—Animal substances are to a very great extent

subservient to the nature and quality of the food with which the individuals are nourished. I believe farmers would find it much to their advantage if they were to consider this subject with reference to feeding cattle and sheep, so that they might select those kinds of food which abound with properties more conducive to the production of flesh than fat. There is no kind of food which the horse consumes that has not a tendency to deposit some portion of fat. It is a substance which must exist to a certain extent; but as it is muscular power, not a predisposition to adipose rotundity, which enhances the value of the animal, the reasons are obvious what guides should be taken in the selection of food.

I have on a former occasion hinted the propriety of bruising the oats, and I will now state my reasons for doing so. The first I will mention is economy. Three bushels of oats, which have undergone that process, are equivalent to four which have not, and the animals which consume them derive greater benefit. Various schemes are adopted to induce horses to masticate their corn, all of which are ineffectual.—Scattering them thinly over the surface of a spacious manger, mixing a handful of cut hay or straw with each feed, and such like devices, will not cajole the animal to the performance of mastication. A horse that is disposed to bolt his corn, however carefully it may be spread along his manger, will soon learn to drive it into a heap with his nose, and collect as much with his lips as he thinks fit before he begins to masticate.—

Whatever food enters the stomach of any animal, and passes away in an undigested form, may be considered as so much dross or extraneous matter, which, not having afforded nutriment, is prejudicial to the creature which consumed it.

A mistaken notion of economy is often the incentive to turning horses out in the summer, to be entirely dependent upon grass for their support. A few remarks will surely dispel that error. Twenty-two bushels of oats—allowing one bushel per week from the 15th of May to the 16th of October—may be estimated as the produce of half an acre of land, and half a ton of hay that of another half acre, although a ton and a half per acre is not more than an average crop. It requires at least an acre of grass land to support a horse during the period above named.

CXCII.

**PRODUCT OF MILCH COWS.**—A dairyman somewhat noted for producing a large amount of cheese annually from his dairy, said to the editor of the *Dairy Farmer*, in a recent conversation, that one of the secrets of his success in this respect was the careful manner in which he treated his herd. His cows were driven to the stable leisurely. No dogs were used for the purpose of driving the cows, and persons in his employ who were caught striking or in any way abusing a cow, were discharged on the instant. Let the cows have an abundance of food, and take their time in coming to the barn, especially in hot weather; milk clean and regularly; and from fifty to a hundred pounds more cheese can be made per cow, during the season, than when the animals are dogged out of the fields night

and morning, or kicked, and pounded, and frightened for every little mistake they are supposed to make. Some people make a great mistake in overstocking and too little attention is given to the treatment of stock, summer and winter. The dairyman should consider a moment whether 30 cows yielding 600 lbs. of cheese per cow, are not as profitable as 40 cows, whose annual product is 400 lbs. per cow.

### HOW TO MAKE CHEESE.

BY ANSON BARTLETT, GRAGA COUNTY, OHIO.

The interests of the dairy are those of a large majority of the farmers in North-eastern Ohio, and still our agricultural periodicals are comparatively silent on the subject of dairying. Now, I am aware that no party is so much to be blamed for this silence as the dairy farmers themselves; for who are so well qualified to speak, write, and give information in regard to any branch of business, as those who are practically engaged in the business? As no article can be published in an agricultural journal without first having been written by some person, and as the editors of such papers are not generally acquainted with the practical details of the dairy, I see no other way by which we can secure the publication of articles interesting to dairy farmers, unless dairy farmers themselves will write such articles, and send them for publication.

Cheese-making, like every other branch of manufacture, requires skill; and I claim that no persons can succeed in making a superior article of cheese, unless they devote their whole time and attention to the business—it being one of the nicest chemical, as well as a very nice mechanical process, it follows, as a matter of course, that any mistake, or anything wrong, however small it may be in itself, is sufficient to injure the product, and lessen its value.

The almost universal practice of dairymen is, to allow as little time as possible for making their cheese, hurrying through with it so as to be about something else; and the only question they stop to ask is: "Will it sell?" With this answer in the affirmative; they are content, caring little whether it is good, bad or indifferent. When I think how many there are in North-eastern Ohio, who will persist, year after year, in taking poor wholesome milk (for mind you, the cows don't give sour or stinking milk), and work it up, or allowing it to work itself up, into such hard, dry, sour and stinking stuff, as they do, I feel vexed. And then to have them pretend that such garbage is fit for human beings, when a great deal of it is already half decomposed and rotten, or is so dry and hard as to be almost indigestible, is absurd.

Although I have long held the forgoing opinion of the importance of skill, care, and the necessity of taking time in the manufacture of cheese, I was never so forcibly impressed with them, as during a visit which I made among

the fine dairies of New York, located in Oneida and Herkimer counties.

The first of these dairies which I visited was that belonging to John O. Frazee, two miles north of the village of Rome, Oneida county, where the milk from 400 cows was made into cheese; and where I saw that every cheese in his cheese-house was as perfect in form as when taken from the press, and still soft as butter, and every one who is posted must see at once that such cheese must be firm, mild and rich—the three essential points of a superior cheese.

I next visited the dairy of Jesse Williams, four miles from Rome, where the milk from four hundred and fifty cows was manufactured into cheese. Here the same perfection of form appeared as at Mr. Frazee's; and after a critical examination of six or seven hundred cheeses, weighing one hundred and fifty pounds each, I failed to detect any, *even the least*, change of form in any one of them, from what they possessed when taken from the press, and still they were perfectly soft and buttery.

I have at one time and another, visited over one hundred of the best dairies in North-eastern Ohio, as well as a large number in Eastern and Western New York and Western Vermont, but I never at any time, or in any place before, have seen a dairy of cheese so near what I considered perfect, as those of Mr. Williams and Frazee; but when I show how perfectly every step of the process of manufacture is reduced to a system, all wonder at the uniformity of the product will cease.

The cows are owned by different individuals, living at various distances from the dairy house; some of them are even four or five miles away; the owners draw the milk as soon as it is taken from the cows, directly to the dairy, where it is accurately measured, and an exact account kept, and the dairymen take it when it is thus delivered to them, manufacture it into cheese, keep it, and take care of it until sold. They then sell it, and after deducting the cost of salt, capping, rennet and anatto used in the manufacture, pay over to each farmer who furnishes milk, his pro rata share of the proceeds, except one cent per pound on the sale weight of the cheese, which, and the whey is the pay of the dairyman for all his labor, care, use of buildings, fixtures, &c.

**EVENING WORK.**—As soon as the milk is delivered and put into the vats at night, they add one gallon of cold water for every ten of milk, which they will have in the vat when it is all in, and immediately set cold spring water to running around the milk vat, and reduce the temperature as quickly as possible to sixty degrees, when it is left for the night with the water still running around the vat, in order to still further reduce the temperature, and keep it cool through the night, and prevent souring.

**MORNING WORK.**—In the morning the milk is put in with the last night's milk, as soon as delivered, and when all is in, the heat is raised to eighty-two degrees in warm weather, and eighty-four in cool, and sufficient rennet added to produce perfect coagulation in one hour and fifteen minutes.

**THE CREAM.**—Before heating to put in the rennet, the cream which has risen on the last night's milk is dipped off and poured back through a cloth strainer, until it has become thoroughly incorporated with the mass of the milk; and after the rennet is added, the milk is kept frequently stirred, dipping off the top and pouring through the strainer until the milk begins to thicken. This is to keep the cream from rising. When allowed to remain quiet, even for a few moments, the cream separates, and rises to the top; and if the curd begins to form with the cream floating on the top, it will work off in the whey; but if kept thoroughly mixed and incorporated with the milk until the milk thickens and the curd begins to form, it is not very difficult to keep it in the cheese, and not lose it in the whey. One great object in adding the water to the milk, is to reduce the milk so as to have the cream work in the more readily.

**THE CURD.**—When the curd is sufficiently formed to go to work at—which may be known by its breaking with a clean, smooth, fracture, in passing the fingers through it—break it up carefully with some instrument, so as to leave it in lumps about two inches square; but this instrument should have no sharp edges so as to cut, for—take very particular notice—no cutting edge, of any kind, must be allowed in the curd at any time during the process of manufacture. This is essential and important. The curd must be divided entirely by breaking, and not by cutting. As good a way as any is to use the hands for breaking the curd from the first. After breaking, as above described, so that the lumps will be about the size of an egg, let it stand about ten minutes, or until the curd begins to settle, and then begin to work and break the curd with the hands. Let the motion be very slow and careful, so as not to work the cream off, or whiten the whey; meantime, raise the heat to eighty-eight degrees; when the temperature arrives at eighty-eight, cut off the heat, let the curd settle, and draw off the whey until there is barely enough left to cover the curd.

**PRESSING OUT THE WHEY.**—Now comes the most difficult part of the process, that is, to break the curd thoroughly and finely, and at the same time preserve the green appearance of the whey. This is done by taking the curd between the hands in small quantities at a time, and bringing the hands flat, and close together with a pretty strong pressure. Care must be taken, however, not to rub or mash the curd so as to start the white whey. In fact, I hardly think any written description of this part of the process will be intelligible practical instruction being almost indispensable, but the result aimed at is to expel the whey from every particle of the curd, by thus pressing it between the hands, as well as to break up the curd.

**COOKING THE CURD.**—When you have completely broken up the curd, put on the heat; keep it stirred and broken until the temperature arrives at ninety-four, and then cut off the heat; keep the curd stirred with a lively motion fif-

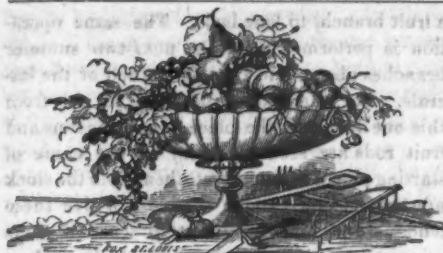
teen minutes, and then draw off the whey again, leaving just enough to cover and float the curd. Now go over the curd again, and break it up as before, getting fine and even as possible, and then put on the heat again and heat to one hundred degrees. This is the greatest heat. Meantime stir the curd with a brisk, lively motion, cut off the heat and keep stirring twenty minutes, and then cover the vat up with a blanket, and let it stand until the curd is thoroughly cooked, which will be about an hour or little longer. When the curd is completely cooked—which may be known by taking a small lump and pressing it firmly between the thumb and finger—if well cooked, on removing the pressure, the curd will spring out into its former position; or select the softest lump you can readily find, break it open; and if it appears dry inside, and free from whey, it may be considered done.

**AFTER COOKING.**—Now let off the hot water from the vat, and re-place it with cold water; cool the curd and whey to eighty-eight degrees, and then dip the whole out into a draining sink, or a cloth strainer, keep it stirred so that it shall not pack together until thoroughly drained; and then add the salt and work it thoroughly.

**SALTING AND PRESSING.**—Mr. Williams' rule for salting is two pounds and seven-tenths of a pound of salt to a cheese from one hundred gallons of milk—beer measure—and Mr. Frazer's rule is two and five-eighths pounds of salt to one hundred pounds of pressed cheese. Either rule will do well enough I think, although I prefer Mr. Williams' rule. When the curd is salted, it is ready to be put into the press, and its subsequent treatment is much the same as is ordinarily pursued.

**RENNET.**—Nothing but the skins of the rennet are used; the curd, if there should be any, being thrown away. The way to preserve them is to use salt enough to do it, and then add a little more salt; stretch on a bow end, hang up in a close, dry place. In preparing the rennet take a gallon of water at the temperature of ninety degrees for each rennet used, put the skins into the water, and add more salt than will dissolve; let them soak two or three days, rubbing them occasionally; and then take out the skins and put them into another vessel, and add water and salt as before. Use of the first until that is gone, and by that time the other will be ready. A good rennet is sufficient to make from six to eight hundred pounds of cheese.

**ANATTO.**—When the rennet is put into the milk, add a small quantity of annatto, just sufficient to give the cheese a bright straw color, or the color of good butter. The best way to prepare the annatto for coloring the milk, is to boil it in strong lye; white lye is best. The quantity to be used must be determined by experience, as no very accurate rule can be given.—*[Ohio Farmer.]*



## HORTICULTURAL.

[Written for the Valley Farmer.]

### Treatment of Vineyard the Sixth Year.

BY LOUIS L. KOCH, GOLCONDA, ILL.



*Sixth Spring.*—Of the latter branches of the preceding year, located on the outside and bearing each three buds, the middle one is to be broken off, just as you did in the past year.—Hence but sixteen buds remain upon the young vine on all its young branches, produced during the last year, and which are necessary to the further development of the sixth year. Subject to a natural law, each of those buds bears two bunches (some perhaps three) so that the tribute rendered to the pains already spent is thirty-two bunches; each being one-fourth pound as previously accepted, makes in all eight pounds of grapes. Hereafter this yield is known to increase in much greater progression unto the completion of the designed form.

The same simple, though careful, attention to the young summer branches is still requisite, and the first departure therefrom is observed in the now ensuing fall.

*Sixth Fall and Seventh Spring.*—At the trimming of the sixth fall, the summer branches next to the trunk or stock and cut back to two buds, will now be again reduced, the one to four



as the first future fruit branch (*b*), and the other

to one bud as the first future tendon (*c*). The four summer branches of every lateral, and attached next to the stock, as well as those near its ends, are cut back to two buds.

### SEVENTH YEAR.

With the seventh year we perceive the vine presenting the stock (*A*), four laterals (*a*), upon each of which we find a fruit rod (*b*), to which there are attached four buds, and a tendon (*c*) with one bud. Next, we observe a branch with two buds, as is the case also on the outer ends of the laterals. Consequently for the next summer nine fruit buds remain on each of the four laterals, or altogether thirty-six buds for the formation of the summer branches and the production of fruit. Without allowing for special hindrances (which as abnormal departures from the natural law cannot be noticed), the young vine in its seventh year will accordingly produce seventy-two bunches, there being thirty-six fruit buds, each containing two bunches, which at one fourth pound each makes eighteen pounds.

As soon as four or five little leaves are perceptible above the last bunches and situate on the four young fruit rods produced by each fruit branch, the upper three of them will be shortened to three leaves, sufficient to secure food and shade to the young grapes, without withdrawing from them any access to means of some growing branch forsooth, while the entire vital force will be borne to it the more certainly. These three upper fruit rods are they which are designed to bear fruit, without obstructing in any way the later forming of the shape of the vine. Afterwards the layer or scion is seen in a much greater number on the thus masked fruit rods, which are found between leaf and branch (the appellation of which abundantly signifies their design) where nature seeks an outlet to the press of juice.

Those summer branches growing out of the lower buds of each of these fruit branches as well as out of the tendons, serving to guarantee wood and fruit for the next year, may be left to grow in their entire length without hindrance, and the layer or scion alone may then be removed, when the espalier is grown over so densely as to check the current of air, and so prevent the maturity of the grapes. This labor however must ever be done with the necessary prudence, so as not to injure the fruit bud now forming for the coming year, and never until the young berries have attained the size of a pea, nor when the vine is in bloom, in which period no kind of labor upon the vine should be undertaken, if it can be avoided, as it too frequently proves hurtful to the formation of the berry at this time. For this ear-

pose I use a sharp knife, and at times leave something like little stumps upon those buds next to the lateral, or perhaps a leaf, in order to ward off every form of injury.

In order most feasilily to facilitate a regular cultivation of the summer branches, these forks or tendrils (more minutely described in the beginning) must be removed whenever they are re-fastened. The young branches are too much disposed to acquire support among themselves, or elsewhere in some improper place, and often interfere considerably with a regular cultivating of the vine. Nevertheless this part of the labor yields no direct influence upon the productiveness of the vine, as many seem to imagine.

On the lower buds of the fruit rods (*b*), on the tendon (*c*), and on all the other branches having now two buds, the summer branches, which have grown forth, remain unhurt, are carefully tied until fall, and only the scions, if necessary, are removed. These young branches, if growing too luxuriantly, may be cut short about from the middle of September, without any disadvantage whatever, while in fact it tends to ripen the wood the sooner.

*The Trimming in the Fall of the Seventh Year.*—In the fall of this year those summer branches on the lower buds of the now on hand four fruit branches (*b*), are cut back to one bud, while those strong, unreduced summer branches however, grown upon the tendon (*c*), as designed to bear fruit, to four buds, in order to fruit branches.

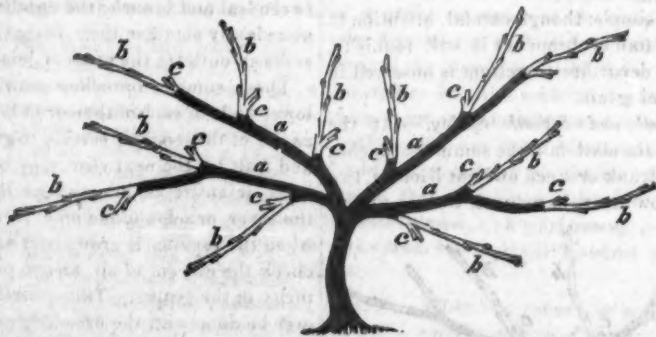
The two summer branches, immediately above on the laterals, are cut back, the one intended for a tendon, to one bud, and the other to serve as

a fruit branch, to four buds. The same operation is performed upon the next two summer branches above, and thus on the end of the laterals. For the sake of clearness, let me from this one designate the place (where tendons and fruit rods are seen together) by the name of starting places and numerate them from the stock upward, as one, two, or three. To give these tendons and branches (if at all feasible) some connecting point, at some small starting place of laterals, presented itself as a necessity, called for after the execution of the engraving, and we find it therefore not clearly represented there.—Just so we discover on the lower laterals but two, instead of the three fruit branches as designated in the engraving, with each a tendon, which however does not interfere with the general treatment, as the form of the vine, adopted in this treatise so far as regards dimension, is but an ideal view of the case, which, as long as we observe the fundamental principle, may admit any modification, conditioned by the strength of the vine, or any other occasions.

The appellation "starting place," is intended then in the further progress of my communication to denote that point where a tendon and a fruit branch are found to stand in close proximity.

After the fall trimming of this seventh year, the vine is perfect according to its desired form, complete in its several parts—

Stock (*A*), four laterals (*a*), on each of which at three starting places a fruit rod and tendon are situated; and thus on all the four laterals twelve fruit branches (*b*), and twelve tendons (*c*).



EIGHTH SPRING.

The spring of the eighth year presenting the vine in the form, as ideally assumed by this treatise, complete in all its several parts, the treatment requires no further perfecting or renewal, which, although more extensive, is yet by no

means more difficult, but on the contrary appears to us more simple and more easily to be understood than before, if the vine from its first year has received the necessary attention.

Besides, if the treatment adverted to is administered to a grape like the Virginia Seedling,

which, with almost unfailing certainty fulfills in the fall the promise it made when the grapes were first set (which at least in our vicinity cannot be said of the ungrateful Catawba), the mode of treatment I have described will gratefully reward the labor of the vine grower.

As every expert in this line will admit, the results previously intimated are nearly such as the plant in response to its own natural law would produce even with rather moderate expectations, whereby this mode of cultivation would guarantee a sure basis and a brilliant future.

But let us proceed to the treatment of this, its eighth summer, before we enter more specially upon a calculation of the yield of a single vine in the eighth year.

All the buds not properly designed to carry out the prescribed form of the vine, will be carefully removed, as it was done in the preceding years.

In the course of the summer we shall describe more in detail, and in all its bearings, the treatment required for those three fruit rods, situate on each of the now existing twelve fruit branches, and the one bearing branch, as well as the twelve tendon branches.

The treatment of the young vine during the eighth, as well as all succeeding summers, extends to the prescribed nursing of the now on hand thirty-six fruit rods and twenty-four summer branches. At the fall trimming, cut off those three fruit rods, attached to each of the twelve fruit branches, close to that summer branch next to the starting place, leaving the summer branch unhurt on each of the twelve fruit branches; these named three fruit rods having done their service, they being but wood merely that has done bearing fruit: but the summer branch designed as a tendon for the next year to be cut back to one bud, as well as each summer branch, produced from the twelve tendons, to four buds, for the purpose of fruit branches of the coming year.

In consequence of the previously described fall trimming, the vine assumes now the same form as in the preceding fall, and by a regular change from tendon to fruit branch, and vice versa, which at the same time tends to renovate the bearing wood, is no longer subject to change of dimension, form or productiveness.

*Productiveness of the Vine in the Eighth Fall.*—

In the spring we found twelve fruit branches, each having four buds, and one bud on each of twelve tendons, making in all sixty buds, for fruit and bearing branches, each one of which will produce one hundred and twenty bunches;

every bunch weighing one-fourth pound, will yield thirty pounds of grapes.

A bushel of grapes of about fifty pounds renders three gallons of must according to usual acceptance, consequently thirty pounds as the yield of one vine, would be one and four-fifth gallons.

In accordance with our premises, that the distance between the vines should be eight by six feet, a piece of ground of forty-eight hundred and forty square rods, planted thus far apart, would contain eight hundred and eighty-four vines, and consequently would bear, aside from any disturbances unforeseen, 26,520 pounds of grapes; or at fifty pounds to the bushel, and three gallons to the bushel, would yield 1,591 1-5th gallons of must. If, for the sake of evenness of number, and in order to be perfectly safe in our calculations, we deduct the ninety-one and one-fifth gallons, there would, after the process of pressing, still remain fifteen hundred gallons of must as the yield of this piece of ground. Or, if you desire to sell the grapes, and, presuming the price at eight cents a pound, they would bring you \$2,120.60.

Taking the distance of six by ten feet, the same piece of ground would require but seven hundred and thirty three vines. Again, bearing in mind the above calculations in regard to yield, it would not tend at all to reduce it, as each vine would have the more room to spread itself toward both sides, and thus would necessarily produce another starting place of tendon and fruit branch to fill out the espalier.

On the whole, as has already been mentioned, all the different designations, noticed in the course of the development of the vine, with particular, almost mathematic accuracy, when speaking of the number and distance of the buds, or the mutual relation of the fruit robes to the tendons are yet to be viewed but as an ideal although practicable representation of the entire principle of the system described in the foregoing.

Fertility, or poverty of the soil, strength, or weakness of the vine, peculiarity in the growth of any particular grape, in consequence of which the buds are nearer to, or further from each other, will frequently render departures from my instructions indispensable, in regard to number or distance of the different starting places of tendon and fruit branch, nay even respecting the number of buds, on the latter. But the fundamental principle must and may always be held fast, and you must so execute these departures, that neither the strength of the vine, nor its yield will suffer as to the final result.

### Culture of the Raspberry.

The best plan for raspberry culture is to make the soil right at first by deep digging and draining, and afterwards mulch heavily without stirring the soil, pulling up by hand what few weeds appear. This we have always found to be the best practice, and finding the same system advocated by Rev. W. F. Radcliff, in the *English Florist and Pomologist*, we give a portion of the article. Speaking of a raspberry bed that had been forked up pretty deeply in the spring, he says:

"Now, I ask any man how he can expect to have a crop of raspberries after this fashion? Not only are the old roots broken, but the new spongioles are broken also; and the roots being turned up to sun and wind, of course the crop dwindles away. Hence a man comes to the absurd conclusion that the garden will not bear strawberries and raspberries. Look at the gardens of England generally, and you will find that, except in wet, dripping summers, there are neither of these fruits. Never disturb the ground at all; hand-weed and cover the whole soil with stable litter from the horse, with a little black manure around the stools, and you will have more raspberries than you know what to do with. If the summer is very sultry, give each stool one bucket of water twice a week. A raspberry lives by suction. From three to five canes are enough, and these should be cut down to three feet. You will get as much fruit by this height as if you left them eight feet high. In a word, the dormant eyes at the base will break, protect the young canes, and keep off the sun. Mine are strong, and are cut to an average of two feet nine inches. I have only one sort, the *Deepest* (red), which with this treatment never fails. The crop last year was enormous; but for want of sun, lacking in flavor. Under proper treatment it cannot be too hot for raspberries and strawberries. Weak liquid manure and Peruvian guano—one small handful to a stable bucket of water—will greatly assist. With regard to forking the ground, I must observe that I have not moved mine for the past four or five years. If you do move your ground instead of your new canes coming up close to the stools, you will have them all over the bed. Keep all runners down except those close to the stools. The closer the ground is kept down the greater will be your crop. High manuring upon an undisturbed surface are two main features in growing raspberries and strawberries. No man tears out the stomach and entrails of his horse and pig in order to fatten them; but this is

what a man does when he despoils the roots and rootlets of his plants. I think the best distance is a yard from plant to plant, and from row to row."

**BUDDING MAGNOLIAS.**—The beginning of August is the best time for budding magnolias. The best stock is the common cucumber tree—*magnolia acuminati*—although other stocks are used in Europe. The best plants are those worked from one to two feet from the ground. Unfortunately, buds however carefully put in, do not always take; they have the bad habit of partially forming a junction with the stock, just sufficient to keep alive for several weeks, and then dying. The bark of the young wood of the stock is easily raised, parting readily from the wood, so that the operation is very easily performed. It is best to have the stocks fairly established in the places where they are to remain, previous to working, as larger and more thrifty plants are thus obtained. After the bud is inserted, cover with grafting wax, sticking plaster, or what is still better, a piece of thin India rubber, a hole being cut in it to let the petiole of the leaf and the bud pass through, and then tying down securely. If the buds should fail to take, the operation may be again performed even a month later.—[*Ohio Farmer*.]

**REMEDY FOR PEACH BORER.**—We find in the *Southern Cultivator* an article from H. F. Grant, of Glynn county, Georgia, in which he gives a "sure remedy against the peach borer," but which is simply nothing more or less than that which we have for many years practiced with our dwarf pear stocks (quince) viz: Remove the earth from around the trunk, say four or five inches, then wrap round the same as far down as is practicable, a bandage of cotton cloth so as to be four or five inches above the ground when the earth is put back, having secured the bandage with cotton twine. This is allowed to remain on, according to Mr. Grant's plan, as long as it is whole, and then re-placed with other. We mentioned that, although we never tried, we had no doubt that this bandage method would be equally effective applied to peach trees, etc. We recommend, however, the removal of the cloths about the first or middle of August, and renew them again as early in the spring as the condition of the ground will admit of the operation. We think so still, as there will then be no chance of neglecting to renew when the old bandages are no longer a protection.

We never had a worm in our quince stocks where this remedy was properly used.

### GRAPE CULTURE.

ED. VALLEY FARMER: Having entertained the hope that, on account of our remoteness from humid regions, we would escape the grape mildew and rot. In a private letter to William Saunders, Esq., Superintendent of the Experimental Garden, Washington, D. C., I so expressed myself. In a letter to me, dated Washington, March 4th, 1863, he says, among other things:

"I am much pleased to learn of your success in the cultivation of the grape, and hope your expectations concerning freedom from mildew will be realized. It is well known that mildew is the greatest drawback in vine culture. Even on Kelly's Island (Lake Erie), where they considered themselves exempt, I presume they have had a visitation of that malady last summer, judging from some grapes they sent me last fall.

"I have been paying special attention to grape mildew, both on the foreign and the native grape, for the past ten years, and think I have learned a little about it. That it is purely atmospheric, I have been long convinced; therefore, have looked with suspicion upon all those remedies that propose to evade mildew by particular modes of pruning, or by certain qualities of soils. My advice is always to select a sheltered situation; if a naturally sheltered situation cannot be secured, make a shelter on the West, North to East, by planting a dense strip of evergreen trees. I have within a year put up a considerable amount of covered trellis, as illustrated in an article on mildew in the Agr. Report for 1861. I have also held the opinion that we have been pursuing a wrong course in the mode of endeavoring to originate an American wine grape:

1. By trying to cross with foreign varieties. This I do not expect to be the best mode, although a good grape may thus be obtained without inheriting the weaknesses of foreign sorts.

2. All our cultivators have been raising descendants of the *Vitis labrusca*, or Fox grape. The Catawba, Isabella, Concord, Rebecca, Hartford Prolific, &c., are from the Fox. Even the Wild Fox grapes in the forests are frequently denuded of their leaves by mildew, while alongside of them, in redundant verdancy, the summer grape or *Vitis estivalis*, will be found. Now there is a hardy constitution to start with, and they have also proved to be of good wine-producing capabilities. The Clinton, a seedling from the summer grape, is being much planted for that purpose. The Franklin and Alvey will

also be found good wine grapes. Indeed I have an idea that the Alvey will be a very superior grape for a high colored wine, but it is very little known as yet."

As I consider the subject upon which Mr. Saunders has addressed me one of vital importance, I have deemed it advisable to give his opinion publicity. His great experience in grape culture and the high position he occupies as Superintendent of the Government Experimental and Propagating Gardens, entitle his opinions to great consideration. It is due Mr. Saunders to say that his letter was written without any expectation of its being published. Hoping Mr. S.'s opinion may call forth the opinion of other practical grape growers, I remain yours, &c.,

A. M. BURNS.

Manhattan, Kan., April 27, 1863.

### Profits of Apple Raising and Cider Making.

Very few are aware of the extent to which the manufacture of cider is carried within a few miles of New Haven, Ct. In conversation with a gentleman from Cheshire a day or two since, we were surprised to learn that in that town alone 5,000 bbls. have been made the past season from apples raised in that and adjoining towns, nearly all of which is now in process of clarification, and will be ready for market early in spring. Four establishments alone have made 1,500 to 2,000 bbls. each, which is already disposed of, and will be sent to market as soon as ready for use. This, when clarified, is as pure as wine, and is sold readily in New York to bottle, for \$4 per barrel for the liquid, and when bottled is in great demand at the South at \$5 per dozen. The business is rapidly increasing, and the cultivation of the apple is likely to prove as profitable as that of the grape at the West, where thousands of dozens of wine are put up yearly. The cultivation of the grape at Cincinnati has increased within a year or two extensively, and although attended with much greater expense, is now the most profitable crop of that locality. The fruit growers of Connecticut can cultivate apples with but little expense, and can realize at least 20 cents per bushel for all they can raise. The past season those who have mills at Cheshire have paid from 18 to 20 cents per bushel for all they could find, taking them from the orchards in which they have been collected, the raiser being subjected to no expense except that of picking them up and piling them in heaps.—*New Haven Journal*.

### PLANTING FRUIT TREES.

ED. VALLEY FARMER: In the last *Farmer "Progress"* inquires the best way of setting fruit trees. My plan is to set one row of trees on one side of my orchard as straight as possible, and and at such distance apart as I wish them to stand, say, twenty feet. Then take three poles, each twenty feet long, fasten the ends together, making an equilateral triangle, lay this down with two corners each touching a tree already set and set a tree at the other corner; go through with the row, which will make a new row; do the same with the second row, and so on till your ground is all set. Or take the triangle into the middle or any part of the field, lay it down and set a tree at each corner. Move the triangle so that two of the three trees set shall form the base by which to set another tree, and so on in all directions until the trees are all set. Each tree in the orchard will then be the centre of a group of seven—that is, each tree will be just twenty feet (or the length of the side of the triangle) from six other trees and all forming perfect rows in all directions. No stakes needed—no equiting necessary.

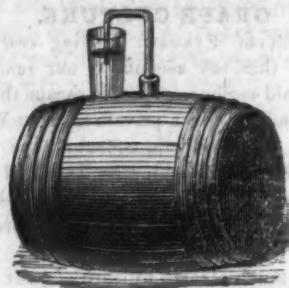
O. J. MARSH.

Hoyleton, Washington County, Ills., May 15, '63.

### How to Make Strawberry Wine.

Eureka! To supply a demand for information is the ambition of all journalists. Ever since Sims startled the rural world with his assertion of the profit of the manufacture of the strawberry into wine, the demand for the how to do it has been constant and increasing. I have given all the positive information I could obtain, but it has not satisfied the appetite of the would-be wine makers. I am glad to be able to give the proportions and ingredients of a strawberry wine, which I think equally as good as Mr. Sims' manufacture. It was manufactured by Mrs. Reese, of this city. The wine was pure amber color, and its flavor preferable to Mr. Sims', because it did not seem to be quite so sweet. It was certainly sweet enough. The juice is expressed as soon as possible after the fruit is gathered, and to one gallon of juice is added two gallons of water; to each gallon of this mixture is added three pounds of the best pulverized loaf sugar.

This "must" may be put into clean barrels, the barrels filled nearly full, and the fermentation regulated by the use of the siphon, as described on page 206, current volume of the *Rural*, viz: Insert the long arm of a tin siphon in the bung-hole of the barrel, sealing it tight at the bung, and immersing the end of the short



arm of the siphon in a vessel of water standing on the barrel. This is regarded as much the better way than the old mode of inserting the bung loosely, or not at all, and thus regulating fermentation. By the mode described above the carbonic acid gas escapes during the process of fermentation without admitting air.

The casks in which the juice is put, should be put in a cool cellar with a dry bottom. The cellar should be well ventilated, and kept at an equable temperature.—[*Rural New Yorker*.]

### Last October's Freeze—Its Effect on Fruit Trees.

ED. VALLEY FARMER: I see in your April No. an enquiry made by Jno. P. McCartney, near Cameron, Mo., concerning the damage sustained by fruit trees during our sudden freeze on the 25th October last. As he is desirous to know through what extent of country trees were so affected, I will speak of our neighborhood, but the more particularly of trees on my own farm. We are here in the best fruit region of the State, or perhaps best West of the mountains. Nearly our whole attention is directed to fruits, most of which are peaches and apples. I have quite a number of each, but my greatest number of trees of one kind is the pear of which I have the dwarf and standard. Our freeze in October was very sudden and unexpected, in fact unprecedented, and at a time when the trees were in a state of growth. I find that the peach and pear were not hurt, or, if so, we have not yet been able to discover it, but the apples are hurt considerable, especially those that were making the most rapid growth. The hurt consists of a perpendicular split in the bark of the tree running from the ground upwards, and in some instances three to four inches in length, though usually only from one to two inches in length. These splits are usually on the north side, yet they are also in some cases at other points: say, north-east and south-west. The trees seem to have been so full of sap at the time of the freeze, that when it took place, the bark was pushed loose

from the wood in most cases, say about an inch each way to the right and left, while in some instances, especially where the tree has three or more slits in the bark (and from the points above named), the bark is loose for three fourths of the way around, which is measured from the centre of the slit. Young trees set last spring were not affected. Mine have been set three years, and the ground being in wheat the two first years, the trees made but little growth till last summer. I am satisfied that the cause of the hurt was the growing state in which the trees were then in. From examining some side shoots, I find that they are in most cases where the shoot was long, froze dead and black to within a few inches of where it grew out of the body. As the apples were planted before I bought, and no list of the same given me, I cannot tell the names of those most affected. They are I think only of three kinds, and they are the most thrifty growers, one of which I know to be the Wine-sap, as it fruited last season; the other is a tree of very rapid growth and of a light wood. I take the third to be the Jeneton—in each case, the trees making the most growth, were most affected. The Early Harvest is but very little hurt. My neighbors say their trees were hurt just as mine. Young trees in the nursery, as far as I know, were not hurt. Our fruit crop (I allude to the peach) promises to be very abundant.

Near Carbondale, Ills., April 14, 1863.

M. LINDSAY.

#### THE VERY BEST RECIPE FOR CURRANT WINE.

—Crush the currants—press the juice out through a cloth or bag. To each quart of juice add three pounds of pure, sifted, double refined sugar, and then add as much water as will make a gallon. Clean brown sugar will answer, but not so well in retaining the fine flavor of the wine.

To make a ten gallon keg of wine, it will require ten quarts of currant juice, and thirty pounds of sugar, filled up with water. Be sure the sugar is well dissolved by rolling over the cask; but a preferable way is to mix all in an open tub or vessel and stir often for twenty-four hours, skimming each time previously to stirring, then put into the cask, leaving the bung open and filling every day with water or juice mixture so as to keep the cask entirely full to enable the sediment to be thrown out of the bung. Fermentation will usually begin in about two days and continue three weeks. After it has entirely ceased fermenting, rack off carefully, then thoroughly scald out the cask, return the wine to the cask, tightly bung up and leave it undisturbed until February—it will then be fit for use, and if preferred may then be bot-

tled. It requires no clearing substance or spirituous liquors of any kind, as it is far preferable without either.

#### PRESERVING FRUIT.

Air decomposes. Here is the great difficulty in preserving fruit—in preserving anything. The air is the great destroyer and changer of the world. Prof. Mapes says: "If tomatoes are slightly scalded and skinned, and put into bottles, and these set into boiling water for a few minutes, and corked and sealed, the fruit will keep as long as desired, and if eaten when first opened will have the same taste as when just picked from the vines."

Our experience is this: We pick our tomatoes, wash and peel; then boil slightly and stir for five or ten minutes, so as to be sure to expel all the air; then heat the bottles, and fill, corking up instantly. If not corked up at once, and when full, the contents will settle and leave a vacant space. The cork should be a short one, and pushed down below the level of the top of the bottle neck—this filled up with melted sealing wax. This is our mode. We have never lost a bottle, nor had the least change take place in the fruit. We have kept it—and generally do—a year, or a year and a half, always with perfect success. We have now a quart bottle filled, which we shall not break till next summer, when it will be two years old. We have no thought at all of its spoiling. Oyster cans are equally good, only there will be a tin taste—not agreeable.

In this process, heat drives out the air, and the glass keeps it out. This preserves the fruit. But there is some fruit that will not preserve, on account of the fixed air in it. Plums are of this nature. Pears, on the other hand, are readily preserved.

There is another way to preserve fruit, the air-pump. Pump out the air and your fruit is safe, regardless of the vacuum in the vessel. Fruit may be preserved with or without sugar; but it should never be boiled with sugar. Boil first, then apply the sugar; or, heat your sirup, and pour over your fruit. This leaves the taste of the fruit distinct. One thing more: use only the purest and best refined sugar—sugar without taste, for whatever odor or flavor there is, goes into the fruit, and will be tasted.

GRAPE VINE FENCES.—There has been a little sparing in the *FARMER* about Grape Vine Fences. The article written by Dr. Schroder and which was replied to by Mr. Husmann, was written as a joke and a burlesque on the Willow Fences. We supposed it was written as a joke, and are glad that it called out the interesting article from Mr. Husmann.

### A Sure Way to Prevent Rabbits from Barking Trees.

ED. VALLEY FARMER: I noticed in the February No. of the *Farmer* an inquiry about protecting young trees from rabbits. I have experimented for the last twenty years, and have found that the surest and best way is to take straight straw or hay and wrap the trees up two or three feet high. It is best to do it on a warm day, soon after a rain, as then the straw or hay will be pliable and more easily twisted. Take wisps from one to two inches in diameter, commence wrapping at the ground, and slightly twisting as you proceed, leaving no openings. Splice by lapping on more hay and twisting as before. Tie it fast at the top. It will not chafe or bark the tree in the least. It can be left on for several years, if desired, and it will expand to suit the growth of the tree. *But I prefer to have trees naked and clean while they are growing.* A smart hand can wrap 500 a day. Another advantage of this mode is, that it protects young trees from winter killing.

I have planted several orchards and have never had a tree winter killed when wrapped. I have wrapped my small trees for fifteen years, except the winter of 1855 and '56. I was persuaded that winter, by a neighbor, to cut open a rabbit, and grease my trees with it. The result was that I lost several trees by being barked by the rabbits. I have seen trees greased with meat, liver, &c., but they failed to be protected by it when the rabbits were plenty and the winter very hard. Rabbits are abundant here on brush-land and in the timber, but scarce on the prairies; and many prairie farmers do nothing to their trees and they are not barked, but are sometimes winter-killed.

I am convinced, that when rabbits are as bad as they are in our brush-land, that all greasing and similar preventives are very unsafe. I also think that all substances applied to trees, which stop up their pores, are more or less injurious to their health.

When trees have been barked in the winter, take scions from them of sufficient length to reach from the green bark below the wound to the green bark above, and fit the upper and lower ends of the scions to the wood and bark of the trees above and below the wounds, having the inner sides of the barks to match. If the wound is bad, insert several, wax well, and if they are fitted nicely, as in grafting, and before the sap starts, they will be sure to live.

Gophers frequently destroy young apple trees by gnawing of the roots. When you find where

they have been working, dig down to their holes, set a small steel trap in the hole level with the bottom, put a board over the hole high enough to allow the jaws of the trap to come together, cover over with dirt, and you will catch one if it travels that road. No bait is needed. Watch for the borer at all times, and cut it out. But prevention is better than cure, so keep the trunks of your trees scraped clean, wash them well in spring and summer with weak lye, soap suds or lime water, and keep leached ashes on the ground at the trunk, and there will be but little danger of them getting into the trees.

Peaches are not yet killed about here, at least one-third of the blossom buds are alive.

Clark Co., Mo., April 1, 1863.

B. P. HANAN.

### Ills. State Horticultural Society's Fair at Rockford.

September, 8th, 9th, 10th and 11th.

ED. VALLEY FARMER: The Executive Committee of the Illinois State Horticultural Society, met at Rockford on the 13th of May, and made the preliminary arrangements for the second annual fair. President G. W. Minier, Ex-President O. B. Galusha, and Vice-President C. N. Andrews on the part at the State Society, and President Horeman, Dr. Haskell, and others, in behalf of the Rockford Society, arranged matters to their mutual satisfaction and in a manner which gives promise of a very successful exhibition.

The Premium List was revised and one thousand copies ordered to be immediately printed for distribution through the State. The Winnebago County Agricultural Society give the use of their beautiful fair grounds and halls for the exhibition. The Rockford Horticultural Society agreed to see to the decoration of the halls, and the principal Superintendents of the exhibition were chosen from its members. The constant presence and well known taste of these gentlemen insures, I think, a better got up fair than we have perhaps ever held in the State.

To those who have never visited this part of Illinois, it can be said that the Rock River Valley is a country of singular beauty, and will well repay a visit during the early autumn. To the lovers of flowers we can say that the reputation of Rockford stands very high as a garden city—and to those who wish to see a glorious exhibition of pomonal wealth, that the north-west is full of bloom which can scarce fail to bring its autumnal sequence of ruddy and golden fruit.

W. C. F.

A farm without fruit trees will be the best customer of the village doctor, and a dreary abode for the children who dwell thereon.



### AMELIA B. WELBY.

Amelia Welby was born in Maryland. She spent her girlhood there, up to the age of fourteen. She then moved to Kentucky—got married at nineteen, and took up her residence in Louisville, where a few years ago she died.

She became acquainted with Prentice of the *Louisville Journal*, and through that paper gave to the world a series of poems, which have popularized the paper, and made famous the author, whose *nom de plume*, "Amelia," became a household word. She was called the "Star of the West;" but was more appropriately, the Bird of the West, as, of all American poets, she sings most—has most the gift of song. She does it as naturally as a bird, and with as little effort. There is no depth, as in a bird's carol; but there is melody. You don't know when you hear her in her happiest mood, whether she sings or talks. You are sure she sings, chants—and yet she is all the while telling you something—just as the thrush would tell you if you could understand her. For instance:

The day was declining—the breeze in its glee  
Had left the fair blossoms to sing on the sea,  
As the sun in its gorgeousness, radiant and still,  
Dropped down like a gem from the brow of the hill.  
One tremulous star in the glory of June  
Came out with a smile and sat down by the moon;  
As she graced her blue throne with the pride of a queen,  
The smiles of her loveliness gladdened the scene.

The scene was enchanting! In distance away  
Rolled the foam-crested waves of the Chesapeake bay,  
While bathing in moonlight the village was seen,  
With its church in the distance that stood on the green.  
The soft sleeping meadows lay brightly enrolled  
With their mantles of verdure and blossoms of gold,  
And the earth in her beauty forgetting to grieve,  
Lay asleep in her bloom on the bosom of eve.

A light hearted child, I had wandered away  
From the spot where my footsteps had gambled all day;  
And free as a bird's was the song of my soul,  
As I heard the wild waters exultingly roll;  
While lightening my heart as I sported along  
With bursts of low laughter and snatches of song,  
I struck in the pathway half worn o'er the sod  
By the feet that went up to the worship of God.

As I traced its green windings, a murmur of prayer,  
With the hymn of the worshippers, rose on the air,  
And drawn by the links of its sweetness along,  
I stood unobserved in the midst of the throng.  
For awhile my young spirit still wandered about  
With the birds and the winds that were singing with-

out;  
But birds, waves, and sephyras, were quickly forgot  
In one angel-like being that brightened the spot.

The time is long past—yet, how clearly defined,  
That bay, church, and village, float up on my mind;  
I see amid azure the moon in her pride,  
With the sweet little trembler that sat by her side;  
I hear the blue waves as she wanders along,  
Leap up in their gladness and sing her a song;  
And I tread in the pathway half worn o'er the sod  
By the feet that went up to the worship of God.

How sweet to my heart is the picture I've traced!  
Its chain of bright fancies seemed almost effaced,  
Till Memory, the fond one, that sits in the soul,  
Took up the frail links and collected the whole.  
As the dew to the blossom, the bud to the bee;  
As the scent to the rose—are those memories to me.  
Round the chords of my heart they have tremblingly clung,  
And the echo it gives is the song I have sung.

Is this talking, or chanting? Her Rainbow  
is in the same strain and measure. It opens thus:

I sometimes have thoughts in my loneliest hours,  
That lie on my heart like the dew on the flowers,  
Of a ramble I took one bright afternoon  
When my heart was as light as a blossom in June.  
The green earth was moist with the late fallen showers,  
The breeze fluttered down and blew open the flowers,  
While a single white cloud to its haven of rest,  
On the white wing of peace floated off in the West.

As I throw back my tresses to catch the cool breeze  
That scattered the rain drops and dimpled the seas,  
Far up the blue sky a fair rainbow unrolled  
Its soft tinted pinions of purple and gold.  
'Twas born in a moment, yet quick as its birth;  
It had stretched to the uttermost ends of the earth;  
And fair as an angel it floated all free  
With a wing on the earth and a wing on the sea.

There is no originality here—only the chant-like strain. That is hers, and distinguishes her from all others—for no one in English words sings as she does. The commonest images in nature are drawn upon, and repeated. She seems to sing without a thought. In consequence, she has faults; but, in consequence also, she has her beauties. Nothing studied can be like the freedom of her verse. Thus she sings the commonest things which touch our life; and because they touch it, she sings them, for they touch her also. Take this, at random:

Her bosom was a soft retreat  
For love, and love alone;  
And yet her heart had never beat  
To love's delicious tone;  
It dwelt within its circle free  
From tender thoughts like these,  
Waiting the little deity  
As the blossom waits the breeze,  
Before it throws its leaves apart,  
And trembles like the love-touched heart.

She was a creature strange as fair,  
First mournful, and then wild;  
Now laughing on the clear bright air  
As merry as a child;  
Then melting down as soft as even,  
Beneath some new control,  
She'd throw her hazel eyes to heaven,  
And sing with all her soul,  
In tones as rich as some young bird's,  
Warbling her own delightful words.

This is but a reflection of her own life. Like all mortals, she has seen shade; but sunshine is the predominant sky of her mind. She says:

Oh for the bright and glad some hours,  
When like a wandering stream,  
My spirit caught from earth and sky  
The light of every beam;  
When into my laughing eye  
A tear drop chanced to start,  
'Twas banished in a moment by  
The sunshine of the heart.

My heart is with the leaping rills,  
That murmur round the home  
Where first my lips were taught to speak,  
My tiny feet to roam—  
The sweet song of the happy birds,  
The whispering wild-voiced breeze  
That caught the faint breath of the rose,  
And waved among the trees.

'Tis thought, because I smile on all,  
That I am vain and gay—  
That by the world's light flattery  
I might be lured astray;  
They know not that my heart oft breathes  
Its fragrance out in sighs,  
That sad songs tremble on my lips,  
And tears within my eyes.

My thoughts are all as pure and sweet  
As when I was a child,  
And all my bright imaginings  
Are just as free and wild;  
And were it not for one bright link  
Within affection's chain,  
I'd wish to wander to that spot  
And be a child again.

She says in the Old Maid, her maturest poem,  
From her lone path she never turns aside,  
Though passionate worshippers before her fall;  
Like some pure planet in her lovely pride,  
She seems to soar and beam above them all.  
Not that her heart is cold—emotions new  
And fresh as flowers are with her heart strings knit;  
And sweetly mournful pleasures wander through  
Her virgin soul, and softly ruffle it.

For she hath lived with heart and soul alive  
To all that makes life beautiful and fair;  
Sweet thoughts, like honey bees, have made their hive  
Of her soft bosom cell, and cluster there.  
Yet life is not to her what it hath been—  
Her soul hath learned to look beyond its gloss;  
And now she hovers like a star between  
Her deeds of love, her Savior on the Cross.

It is that freshness—as fresh as nature itself—nature reflected—that gives to Mrs. Welby's poetry the charm it has. If there is melody and harmony in nature, including the human heart, here we find it. No such ease; no such freedom; no such happiness, do we find in Tennyson—nor indeed in any other poet. It is true

these are not the chief qualities of poetry; but they have an important influence, as witness the unassuming lines above. Divest them of the qualities we have mentioned, and what would be left?  
F. G.

### A PICTURE OF HOME.

BY DR. J. G. HOLLAND.

I recall a home long since left behind in the journey of life, and its memory floats back over me with a shower of emotions and thoughts to wards, whose precious fall in my heart opens itself greedily like a thirsty flower. It is a home among the mountains—humble and homely—but priceless in its wealth of associations. The waterfall sings again in my ears as it used to through the dreamy, mysterious nights. The rose at the gate, the patch of tanzy under the window, the neighboring orchard, the old elm, the grand machinery of storms and showers, the little smithy under the hill that flamed with strange light through the dull winter evenings, the wood pile at the door, the ghostly white birches on the hill, and the dim blue haze on the retiring mountains—all these come back to me with an appeal that touches my heart and moistens my eyes.

I sit again in the doorway at summer night-fall, eating my bread and milk, looking upon the darkening landscape, and listening to the shouts of boys upon the hillside, calling or driving home the reluctant herds. I watch again the devious way of the dusty night hawk along the twilight sky, and listen to his measured note, and the breezy boom that accompanies his headlong plunge towards the earth.

Even the old barn, crazy in every timber and gaping at every joint, has charms for me. I try again the breathless leap from the great beams to the hay. I sit again on the threshold of the widely open doors to the soft south wind of spring—and watch the cattle, whose faces look half human to me as they sun themselves and peacefully ruminate, while drop by drop the melting snow on the roof drilled holes through the wasting drift beneath the eaves.

The first little lambs of the season tottle by the side of their dam, and utter their feeble bleatings, while the flock nibble at the hay stack, or a pair of rival wethers try the strength of their skulls half in earnest and half in play. The proud old rooster crows upon his dung hill throne, as some delighted member of his silly family leaves her nest, and tells to her mates and to me that there is another egg in the world. The old horse whinnies in the stall, and calls to me for food. I look up to the roof, and think

of last year's swallows—soon to return again—and catch a glimpse of angular sky through the diamond-shaped opening that gave them ingress and egress. How, I know not, and care not, but that the old barn is a part of myself—it has entered into my life and given me growth and wealth.

But I look into the house again, where the life abides, which has appropriated these things, and finds among them its home. The hour of eve has come, the lamps are lighted, and a good man in middle life—though very old he seems to me—takes down the Bible and reads a chapter from its hallowed pages. A sweet woman sits at his side with my sleepy head upon her knees, and brothers and sisters grouped reverently around me. I do not understand the words, but I have been told that they are the words of God, and I believe it. The long chapter ends, and then we all kneel down, and the good man prays. I fall asleep with my head in the chair, and the next morning remember nothing how I went to bed.

After breakfast the Bible is taken down and the good man prays again; and again is the worship repeated through all the days of many golden years. The pleasant converse of the fireside, the simple songs of home, the words of encouragement as I bent over my school tasks, the kiss as I lie down to rest, the patient bearing with the freaks of my restless nature, the gentle counsels mingled with reproof and approval, the sympathy that meets and assuages every sorrow and sweetens every little success, all these return to me amid the responsibilities which press upon me now, and I feel as if I had once lived in Heaven and straying, had lost my way.

Well, the good man grew old and weary, and fell asleep at last with blessings upon his lips for me. Some of those who called him father, lie side by side in the same calm sleep. The others are scattered and dwell in new homes, and the old house, and barn, and orchard have passed into the hands of strangers, who have learned or are learning to look upon them as I do now.

Lost, ruined, forever left behind, that home is mine to-day, as truly as it ever was, for have I not brought it away with me and shown it to you? It was the home of my boyhood. In it I found my first mental food, and by it was my young soul fashioned. To me, through weary years and many dangers and sorrows, it has been a perennial fountain of delight and purifying influences, simply because it was my home, and

was and is part of me. The rose at the gate blooms for me now. The landscape when I summon it, and I hear the voices that call me from lips which memory makes immortal.

[Written for the Valley Farmer.]

### THE FARMER.

Oh, who can rejoice like the farmer,  
To whom has such blessings been given?  
Or who can look up so directly,  
And render thanksgiving to heaven?

For him came the Spring with her bounty,  
Her sunshine and warm gushing rain,  
While he turned up the soil with the plowshare,  
And scattered the furrow with grain.

For him were the bright golden hours,  
Which make up the long summer day,  
And sweetly with music and flowers,  
Did nature enliven his way.

But brightest of all was the Autumn,  
When the field, and the tree, and the vine,  
Rewarded the toil of the farmer,  
With treasures surpassing the mine.

Who trusts in the Lord, like the farmer  
For the increase which springs from the soil?  
And who from His hand so directly,  
Receives the reward of their toil?

COUNTRY GIRL.

**MILK, TEA, AND COFFEE.**—In Prof. Loomis' article on "Food," in the last Patent Office Report, he thus speaks of milk, tea, and coffee:

"Milk contains in solution not only a due proportion of carbon, hydrogen, oxygen and nitrogen, but all the other elements necessary for the construction of bone, nerve, &c., and hence is always a proper food in all circumstances of health.

"Tea derives its beneficial qualities not from its direct supply of nutrition, but from its affording a peculiar substance called theine, the effect of which in the system is to diminish the waste, thus making less food necessary. Tea thus has a positive economic value, not as a supplying but as a saving nutriment.

"Coffee, though of a taste so little allied to tea, derives its value in precisely the same manner and from nearly the same substance. Its value and effect in the system are therefore the same as those above stated. It is hence evident that milk, tea and coffee, are valuable articles of food under all conditions of temperature."

**REMEDY AGAINST MOTHS.**—An ounce of gum camphor and one of the powdered shell of red pepper are macerated in eight ounces of strong alcohol for several days, then strained. With this tincture the furs or cloths are sprinkled over, and rolled up in sheets. Instead of the pepper, bitter apple may be used. This remedy is used in Russia under the name of Chinese tincture for moths.

[Written for the Valley Farmer.]

**THE LIVERLEAF.**

Oh little liverleaf!

Thy time is all too brief:

Like me, thou comest soon to grief.

Scarce hast thou come, before

Thy little day is o'er,

Leaving me here, to love thee, more.

My earliest memory

Of wild flowers, is of thee;

And thou art still the first I see.

When all around is dearth,

Then thou, fair flower, hast birth;

And forthwith joy is born on earth.

Joy that the spring is here—

That other flowers are near,

And in succession will appear.

But thou'lt soon close thine eye

Upon the sunny sky

With other flowers; and so will I. F. G.

**HEALTHFULNESS OF APPLES.**—There is scarcely an article of vegetable food, says *Hall's Journal of Health*, more widely useful, and more universally loved than the apple. Why every farmer in the nation has not an apple orchard, where the trees will grow at all, is one of the mysteries. Let every farmer lay in from two to ten more barrels, and it will be to them the most economical investment in the whole range of culinaries. A raw mellow apple is digested in an hour and a half, while boiled cabbage requires five hours. The most healthy dessert that can be placed upon a table is a baked apple. If taken freely at breakfast with coarse bread and butter, without meat or flesh of any kind, it has an admirable effect on the general system, often removing constipation, correcting acidities, and cooling off febrile conditions more effectually than the most approved medicines. If families could be induced to substitute the apples—sound, ripe, and luscious—for the pies, cakes, and sweetmeats with which their children are too often indiscreetly stuffed, there would be a diminution in the sum total of doctors' bills in a single year, sufficient to lay in a stock of this delicious fruit for a whole season's use.

**HOME LIFE.**—Even as the sunbeam is composed of millions of minute rays, the home life must be constituted of little tendernesses, kindly looks, sweet laughter, gentle words, loving counsels; it must not be like the torch blaze of natural excitement, which is easily quenched, but like the serene, chastened light which burns as safely in the dry east wind as in the stillest atmosphere. Let each bear the other's burden while—let each cultivate the mutual confidence, which is a gift capable of increase and improvement—and soon it will be found that kindness will spring up on every side, displacing constitutional unsuitability, want of mutual knowledge; even as we have seen sweet violets and primroses dispelling the gloom of the grey sea-rocks.

**A FABLE.**—Two neighbors, whose names were Self and Will, attempted to cross a stream from opposite sides, upon a foot-bridge so narrow as to allow of but a single footman at the same time. They met about midway of the stream, where each insisted that the other must turn back and give the right of way. Each claimed to be first on the bridge, and maintained his ground as a prior occupant. Each contended for this right as a matter of principle, which would allow of no concession. Each pleaded earnest and important business. Will felt himself morally bound to maintain his rights.—Self could not in conscience make concessions without sacrificing his honest convictions.

Argument resulted in angry words, and from hard words they came to blows, and in the struggle to maintain each his own rights, both fell together in the stream.

Each with difficulty gained the shore, exhausted and shivering from a cold bath. Each consoled himself with the idea of "personal suffering for righteousness' sake;" and both became bitter enemies for life.

While they were muttering revenge upon each other, two other neighbors, named Love and Kindness, met in like circumstances upon the same bridge. It was a meeting of glad surprise. They exchanged cheerful and happy greetings, and each insisted on yielding the right of way to his brother. Each desired to be first in the concession; and to carry out each other's principles, both twice crossed the bridge together. After a friendly chat, they parted company, finding in their experience a practical reason for the injunction, "Let each esteem the other better than himself."

**EARLY INFLUENCE.**—There can be no greater blessing than to be born in the light and air of a cheerful home. It not only insures a happy childhood—if there be health and a good constitution, but it almost makes sure a virtuous and happy manhood, and a fresh young heart in old age. We think it every parent's duty to try to make their children's childhood full of love and childhood's proper joyousness; and we never see children destitute of them through the perverted, faulty tempers, or wrong notions of their parents, without a heart-ache. Not that all the appliances which wealth can buy are necessary to the free and happy unfolding of childhood in body, mind or heart—quite otherwise—God be thanked; but children must at least have love inside the house, and fresh air and good play, some good companionship outside—otherwise young life runs the greatest danger in the world of withering or growing stunted, or sour and wrong, or, at least, prematurely old and turned inward on itself.

**TO KILL FLIES.**—Use—but there is no use to give a receipt, as you will have to kill all your neighbor's flies before you get rid of the pest; and by that time a new brood is on the wing. A law ought to be passed against flies. Who will move in the matter? How would it be to propagate spiders?

**TOMATOES.**—Are tomatoes really the thing they are said to be? It is claimed they are medicinal as well as alimentary; that they have an excellent effect upon the liver; and, it is predicted that they will eventually displace calomel. We have seen only good effects from the use of tomatoes. They can be used, when yet green, by boiling them for some time, seasoned with butter, vinegar, &c.; or when ripe (just ripe) cut up and seasoned with salt, pepper, vinegar, and sugar; or when fully ripe, reduced by boiling and simmering to a concentrated liquid, which is most grateful. No vinegar is needed in this form, only salt and pepper, and a little sweetening.

**MARRIAGE ON SHORT ACQUAINTANCE.**—There is not a city, there is scarcely a township, which does not number among its inhabitants women who have married on very short acquaintance only to be abused, deserted, and left a burden and a life long-sorrow to the families in which they were born and reared, and which they most imprudently and improperly deserted to share the fortunes of relative strangers. If young ladies could realize how greatly indelicate as well as culpably reckless such marriages appear in the eyes of the observing, they surely would forbear. A year's thorough acquaintance, with the most circumstantial accounts from disinterested and reliable witnesses, of the antecedents from childhood, are the very least guarantees which any woman who realizes what marriage is, will require of a stranger. Even then, if her parents are not fully satisfied, as well as herself, she should still hesitate. Marriage is an undertaking in which no delay can be so hazardous as undue precipitation.

### TEA AND COFFEE AGAIN.

Prof. Liebig is to the world now what Sir Humphrey Davy was in his time—the great practical chemist of his day. Agriculture is immensely indebted to Prof. Liebig. It is he who has discovered that taurine is identical with theine in tea, and caffeine in coffee. Taurine is found in the blood, and results from the waste of the system. Theine, according to Liebig, is supposed (we presume homœopathically) to exert a counter-influence, and prevent the formation of taurine, in other words, the destruction of the tissues. At any rate, the philosophers have decided, quite emphatically, that theine, the principle of tea, caffeine, that of coffee; theobromine, of cocoa; and a similar principle in the Paraguay tea of South America—are life prolongers, if moderately used. This is their principle. It is this no doubt that has something to do with the inveterate tea drinkers, who frequently live to an old age.

## Domestic Department.

**TO MAKE APPLE FRITTERS.**—Take one pint of milk, three eggs, salt just to taste, and as much flour as will make a batter. Beat the yolks and whites separately, add the yolks to the milk, stir in the whites with as much flour as will make a batter, have ready some tender apples, peel them, cut them in slices round the apple, take the core carefully out of the centre of each slice, and to every spoonful of batter lay in a slice of the apple, which must be cut very thin. Fry them in hot lard to a light brown on both sides.

**A DELICATE DESSERT.**—Lay half a dozen crackers in a tureen, pour on enough boiling water to cover them. In a few moments they will be swollen to three or four times their original size. Now grate loaf sugar and a little nutmeg over them, and dip on enough sweet cream to make a nice sauce, and you will have a simple and delicious dessert that will rest lightly on the stomach—and it is easily prepared. Leave out the cream, and it is a valuable recipe for "sick-room cookery."

**HOMINY CAKES.**—A pint of small hominy, a pint of white Indian meal, sifted, a salt-spoonful of salt, three large table-spoonfuls of fresh butter, three eggs, or three table-spoonfuls of strong yeast, a quart of milk. Having washed the hominy and left it soaking all night, boil it soft, drain, and while hot, mix it with meal, adding the salt and butter. Then mix gradually with the milk, and set it away to cool. Beat the eggs very light, and add them gradually to the mixture. The whole should make a thick batter. Bake on a griddle.

**LEMON PIE.**—Two cupfuls of sugar, two cupfuls of warm water, two eggs, two lemons, three ounces of butter, one table-spoonful of corn starch. Grate the rind of the lemons, use the juice of both lemons, but the rind of only one, or it will make it bitter; beat the sugar and eggs together; then add the juice and rind, then the butter and corn starch, then add the warm water; this is sufficient for two pies. We consider this a very excellent pie.

**OINTMENT.**—Obtain a pint of real cream, let it simmer over the fire, or on the side, till it resembles butter, and forms a thick oily substance; which may be used as an ointment for fresh or old wounds, cracked lips or hands.

**RINGWORM.**—The head to be washed twice a day with soft soap and warm soft water; when dried the places to be rubbed with a piece of linen rag dipped in ammonia from gas tar; the patient should take a little sulphur and molasses, or some other gentle aperient, every morning; brushes and combs should be washed every day, and the ammonia kept tightly corked.

**ARRANGEMENT OF THE DINNER TABLE.**—Always have the salt-cellars filled with fine clean salt, and the cruets and cruet-stand dusted; and that each of the cruets are about half full of vinegar, oil, pepper, sugar, &c., such as they are intended to hold; and although this is the housemaid's duty, it is only kind in the cookmaid to give the housemaid all the information she may require or ask for; a good dinner will look very unhandsome, unless the housemaid takes care that the salts and cruets are clean, and sufficiently filled to accompany it to the table. The housemaid should also see that the mustard cruet is quite clean, before it is put on the table; for if the mustard is dried on the edges, or on the spoon, it has a very disagreeable appearance, and betokens an untidy servant.



## Editor's Table.

### Only Seventy-Five Cents.

We will send the VALLEY FARMER from the first of May to the end of the year—eight months—together with our Premium Essay on the Culture and Manufacture of Sorghum, for only seventy-five cents.

As an inducement to our old subscribers to put forth some exertions to procure new subscribers, we will send to those who forward us one name and seventy-five cents, the Report of the Missouri State Horticultural Society, recently published. This Report is valuable to every Western fruit grower, and can be obtained so easily by this offer, that we hope to see it widely disseminated.

**SEVERE DROUGHT.**—At St. Louis and vicinity, a severe drought has prevailed up to the present writing (May 28th). There has been scarcely any rain during the entire spring. For the last three or four weeks the ground has been too dry to plow. Fruit trees, planted the present spring, have suffered severely, many dying. Strawberries are not more than one-fourth of a crop. No fruit needs more rain than the strawberry—without it, but a small yield will be obtained. The grass crop will be quite light. Winter wheat and the spring crops have suffered much. Without heavy rains soon, most crops will be a failure. Tobacco plants, sweet potato plants, &c., have not yet been planted to any extent.

Since writing the foregoing, we have been blessed with a copious rain—worth millions to the West.

**FRUIT PROSPECTS.**—We have never known such a glorious prospect for fruit of all kinds in the West. Apples, Peaches, Cherries, Pears, Plums, Apricots, Nectarines—all promise an abundant yield.

**SORGO.**—This is a new work by Isaac A. Hedges, of Cincinnati. From a cursory glance at its contents, we think it a valuable contribution to our treatises on the subject. Certainly every one cultivating Sorgho would find it valuable. Mr. Hedges, the author, has given the subject unceasing attention since the plant was introduced into this country. For sale by P. M. Pinckard, 80 Pine Street, St. Louis, and other booksellers.

**ANSWERS TO QUERIES.**—Ed. Valley Farmer: In your issue for May, I notice that X. Y. Z. asks a series of questions, and asks some one to answer.

1. "What is the safest and best remedy for lice on colts and calves?"

Answer—Oil or lard (or any old stale grease), poured, or rubbed, on the back and neck of the animal; one or two applications will be found effectual.

2. "When is the best time for grafting and budding?"

Answer—The grafting should be done in spring, just as the buds on the stock begin to swell, the scions having been cut a week or so previous, and put away in a cool, damp place. The best time to bud the most varieties of fruit is the first of September, a few days after a rain, when the bark will peel readily.

3. "Is it best to prune peach trees as apple trees, and if so, when is the best time?"

Answer—Peach trees should be pruned the very opposite of apple trees. While the apple is pruned to make the head open, the peach should be headed in; else, as the inside limbs of peach trees have a constant tendency to die out, they will soon bear only on the ends of the branches, and your trees will break down. The best time to prune apple trees is May and June, when the cross limbs and dead wood of peaches can be removed also; but the heading-in should be done the last of September and first of October, to give the fruit buds and wood time to ripen for winter.

Hannibal, Mo., May 25, 1863.

S. F. T.

### Proceedings of the State Horticultural Society.

The Proceedings of this Society are published in pamphlet form. They are printed in good style, and on good paper making a very valuable work of 60 pages. We had a number of distinguished horticulturists from a distance, whose remarks and essays add great value to the discussions. Not having space to publish these proceedings in the "Valley Farmer," without crowding upon our other departments, we have issued a few hundred extra copies at our own expense, and will furnish them to our readers at cost price, 25 cents. Some of the essays alone are worth this sum. To every fruit grower the pamphlet is worth several dollars. All the fruits are taken up and discussed, and lists adopted of the best varieties. The best modes of culture are pointed out, and a vast amount of valuable pomological information given. By enclosing 25 cents in a letter to the Editor or Publisher of this journal, the pamphlet will be sent postage paid.

**INSECTS IN COLORADO.**—ED. VALLEY FARMER: The great scourge to farmers in Utah, is now very abundant in Colorado. They appeared very early, in some localities, in March, and by the middle of April they were to work in good earnest. They were quite small when they first appeared, and one would not believe that they were capable of doing the damage they do, if we did not see it. Their only object seems to be to eat, and at it they go, sparing nothing eatable that comes in their way. They eat onions, potatoes, beans, peas, and all kind of grains and grasses; they are at present operating particularly on fields of small grain. They pass over and make a clean sweep; but if they do not stop all summer, or if they disappear within fifteen or twenty days, the grain will stand a chance to be a pretty fair crop. There were a few of them visited our farmers last season, and injured the crop in some localities considerable. Some of the farmers begin to fear that the crop will be ruined, and so they will if they tarry yet a month; but we trust that they will migrate after they have prolonged their visit a little longer. We wish them a pleasant journey out of this section.

COLORADO, MAY 4, 1863.

O. S. TEMPLE.

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**YORKSHIRE PIGS.**

I can spare a few pair of pure bred Yorkshire Pigs if ordered soon. The Yorkshires are of large size, larger than the Chester White—keep and fatten easily, quiet disposition and hardy constitution. Their color is white, have plenty of bristles, and are well adapted to meet the wants of Western breeders. Price \$25.00 per pair.

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